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A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS. GLEANINGSBEE CULTURE ILLUSTRATED SEMI-MONTHLY Published by THE A. I. ROOT CO. \$1.00 PER YEAR MEDINA, OHIO.

Vol. XXIV.

FEB. 15, 1896.

No. 4.

STRAY STRAWS FROM DR. C. C. MILLER.

GREAT BRITAIN, says B. B. J., imported in 1895 honey to the value of \$200,000.

CENTRALBLATT says foul-brood spores can give the disease after being kept seven years.

IN FRANCE there is complaint that honey granulates too slowly this year, making consumers suspect its genuineness.

DID YOU EVER know so much inquiry about sweet clover as at the present time? [No; and it's a good omen for bee-keepers.—ED.]

GRAVENHORST says he has often had laying workers in the same colony with virgin queens, the laying workers disappearing when the queens commenced business.

A LEAFLET for bee-keepers to scatter among consumers is now hatching in Hutchinson's brain. Good thing. [Yes; and Hutchinson is a good man to get it up.—ED.]

HOT WATER is objected to as a drink by some people who forget they are themselves using it three times a day. Hot water is none the less hot water because it is flavored with tea or coffee.

I INDORSE the editor's good opinion of Horlick's malted milk. A cup of it with hot water makes a drink with the refreshing qualities of beef tea, with the added advantage of an abiding strength that beef tea doesn't possess.

GARDENING, literature, law, medicine, religion, poultry, have formed departments of bee-journals, and now the *Nebraska Bee-keeper* has started a department on irrigation. May be that will help the honey crop in dry seasons.

DE LAYENS reports in *L'Apiculteur* a thorough series of experiments which seems to show that bees ventilate, not to cool the hive, but to evaporate the honey. The number of fanners early in the morning was in proportion to the flow of honey.

MEUSETYPHUSBACILLUS is what they're now proposing to kill mice with in Germany. Five

cents sent to the station at Leitmeritz brings a package with instruction for use. It's harmless to other animals. Its very name ought to frighten the mice away.

UNITE a swarm having a virgin queen with a colony having a fecundated queen, whether she lays or not, and Gravenhorst says the bees with the virgin queen will be killed. But remove the virgin queen and sprinkle the bees with salt water, flour, etc., and all will be well.

MEAT-CUTTERS may be a good thing for people who have to gum it; but I'll give a meat-cutter odds any day, and do a better job on a beefsteak with my teeth. [If you have good teeth, that is all right; but many haven't, and hence the chopper is almost a necessity.—ED.]

M. LEGROS, by his improved glossometer, finds the length of the average worker's tongue to be 6.5 millimeters (.256 of an inch); and by selection he has obtained bees whose tongues measure 7.5 millimeters—a gain of about $\frac{1}{5}$ of an inch.—*L'Apiculteur*. I wish I had a glossometer.

R. L. TAYLOR, in *Review*, while he doesn't hold out very great encouragement for feeding back, thinks it may succeed with right conditions, such as black or hybrid bees, a prolific queen, time immediately at close of white-honey harvest, small brood-chamber, or one section of Heddon hive, and sections well toward completion.

WHEN IT COMES to adulteration of wax, America must take a back seat for Germany. Much has been said about adulteration of foundation; and now comes an enterprising firm at Cologne, boldly advertising *Gewerbe-wachs* (trade-wax) of three grades at 18, 25, and 31 cents a pound. The best is $\frac{3}{4}$ beeswax; the cheapest is pure *Gewerbe-wachs*.

RENEWAL OF QUEENS. Herr Strutz says in *Centralblatt* that he thinks strong colonies usually renew their queens annually at the close of harvest, and that prime swarms do the same. That may be partially true; for, naturally, a queen that had laid heavily throughout the season would be more likely to be superseded than one whose laying room had been limited.

A SEEDSMAN in Kent, England, as reported in *B. B. J.*, banished bees from his neighborhood because of crossing his seeds; but when he found the seeds were insufficiently fertilized he was glad to get the bees back. [It is the same old story over again, and yet some won't be convinced. Keep such stories, as long as they are true, afloat.—ED.]

"WE STRONGLY ADVISE the use of combs for storing purposes which have never been contaminated by brood-rearing. That honey stored in old brood-combs will be deteriorated in quality, we have no doubt whatever."—*British Bee Journal*. [This point has been urged in this country and others. Probably there is some truth in it.—ED.]

A GERMAN bee-keepers' society has adopted the rule that a fine of 12½ cents must be paid by each member who fails to bring in a question for discussion. Since the adoption of the rule there has been no lack of material for lively discussion. [There was no lack of material at the last Chicago convention, which was given over exclusively to the question-box, and yet no fine was imposed.—ED.]

SIXTEEN DAYS is the orthodox age for bees to begin field work; but H. R. Boardman says (p. 53) ten to fourteen. Unless he can verify that statement he should be arraigned for heresy. [Outside of the knowledge we get from the bee-books, I wonder how many of us actually know from experience and observation. I suspect Mr. Boardman went to the book of Nature. It would be just like him.—ED.]

M. LEGROS, according to a report in *L'Apiculteur*, has increased the size of his bees, consequently the length of their tongues, by using worker-cells of increased size. He makes selections by means of his improved glossometer. [I don't believe increasing size of cells would increase the size of bees. It has been tried, and failed, I think. But I do believe something can be done by selection.—ED.]

"IN ALL THE OLDER and well-settled States, the woodman's ax and our modern farm machinery have so reduced the pasturage as to render specialized bee culture very precarious."—*E. Secor, in Review*. Time that chestnut was "roasted." Eugene. The failure of honey crops came long after the ax, *et al.*, had done their work. And by that same token crops may again be as they were 20 years ago. [Yes; and on the other hand, Secor's statement is a good deal true, in many sections at least.—ED.]

I protest against that sort of tyranny that says I must use spacers I don't like at all for comb honey just because they suit extractors. And I tried to say so in last Straws; but the fiendish types reversed my meaning after this fashion: "I protest against that sort of tyranny that says I must use spacers. I don't like them at all for comb honey," etc. Think of

making me say that, after I have been pleading with tears for good spacers! [The statement as it came from your typewriter was all right. I read your copy as you intended your meaning, and made my answer accordingly; but our proof-reader, I see, put the word "them" in the sentence, and a full stop after "spacers," thus changing your meaning. If I read the proof afterward I did not notice the change. The omission of the relative "that" or "which," after "spacers," he says, besides the wide separation between "spacers" and the next word, ditched his train (of thought) and gave him a misapprehension of what you meant. We'll be more careful after this.—ED.]

THE *Review* is the latest to succumb to the pressure of the importance of some other topic than bees, and has nearly five pages on hygiene, written by Allen Pringle. As might be expected, some good things in it; among other things a strong plea for the use of flour that hasn't all its best parts sifted out. But it's so hard to get whole-wheat flour, people will continue foolishly to eat the pale remains. [The article is good, and I indorse it *all through*, except where the use of meat should be avoided, or at least eaten sparingly. I grant that meat, when taken with a great lot of other food, often does more harm than good by overloading, as it is a strong food; but when taken by the Salisbury plan, ⅔ lean meat (beef and mutton) and ⅓ other food, it does great good. I *know* this by actual test upon myself, upon my boy, and dozens of other cases under my observation. When taken in this proportion the meat is very easily digested. The system, in order to become accustomed to it, must commence with *small* rations at first—three or four ounces.—ED.]



ON THE WAR-PATH.



In a very kind notice of Skylark (*Review*, p. 248) friend Hasty criticises the first issue of these papers. He says in regard to the adulteration of honey:

The only sample of California honey I ever sent for was dark in color, and too queer in flavor and other characteristics to sell at all. Perhaps mixing in a fine quality of glucose would make it sell. At any rate, if the adulteration is actually done it is of small moment to "we-uns" where it is done. Once again, prove to the railway magnates that your freight *can* not stand the charge, and a special reduction is not unthinkable. How about glucose at 1½ cents with freight reduced to half a cent, and a salable product made of a previously unsalable one? When plausible argument collides well-authenticated fact, the argument has to give way. It is quite imaginable that friend Dayton had such

an inside view of things as enabled him to give us the authentic fact when he said that half California's product left the State in an adulterated condition.

Is this the only sample of California honey he ever saw—a sample from some one who had no better? Does he judge all our honey by a single bottle, or a 60-pound can? We have a honey-producing country larger than any one of half the States in the Union. We have all climates the world can produce, from the arctic winter of the mountains to the seductive climate of Italy or the balmy fragrance of "Ceylon's isle." Climate! yes, we can furnish any climate wanted. All we need do is to reach up to a pigeonhole above the desk, and haul out any climate we please. We have no cyclones to scatter our apiaries to the four winds of heaven; no lightning to speak of; no thunder, except that of Skylark as it rolls across the continent.

Is such a land, teeming with the greatest assortment of honey-plants the world can produce, to be judged and condemned by a single sample of dark honey? Suppose I were to obtain a sample of the "bug-juice," you sometimes get at Richards, O., and hold it up to the gazing world as a sample of Ohio honey, and cry aloud that it all needed a "good article of glucose to make it salable;" could you think I should be doing justice to Ohio? Bro. Hasty, you have been *too hasty* in your remarks. Did you ever see comb honey as white as the driven snow? That was black-sage honey, and was produced on California soil. Did you ever see extracted as clear and beautiful as any water from a living spring? That was also black-sage honey, and was the product of California soil. We stand on the top of our woodpile and crow over our honey. We challenge mankind to produce such a quantity and such a quality on any territory of the same size, the world over. Bro. Hasty, I am mad at you—real mad. You *will* try to adulterate that honey, all I can do. I have got Bro. Dayton down, and you try to pull me off, contrary to the Queensbury rules. But you just hold him for me till I knock the stilts from under your own figures. You people buy glucose for $1\frac{1}{2}$ cents, then figure on bulldozing the railroad to carry it over the continent for $\frac{1}{2}$ cent—a far lower rate than they would carry cobble stones. Hasty, you ought to be ashamed of yourself, to try to wreck a railroad in this reckless manner. Very well, we will take your own figures.

Glucose, $1\frac{1}{2}$ cents; freight, $\frac{1}{2}$ cent; drayage at both ends of the line, handling, and mixing, $\frac{1}{2}$ cent more; cases and cans, $\frac{3}{4}$ of a cent; in all, $3\frac{1}{4}$ cents per pound for glucose to mix with honey at 3 cents. What a splendid speculation! At the time friend Dayton's article appeared, hundreds of tons of honey were actually being sold—from Los Angeles to Monterey—for 3 cts. per pound, and it is no higher yet.

Now, friend Hasty, if *you* have any "inside views" or "authentic facts" that would enable you to take honey at 3 cents, and mix it with glucose at $3\frac{1}{4}$, and make money on it—why, just prance them out.

I don't see why the editor of the *American Bee Journal* does not send me such questions to answer as the following, which appears in the question-box for 1896:

Query 1. Please tell about how often you "go into" or take frames out of each hive in the course of the year.—KY.

Well, it depends on how many hives you have. I don't want to be too hard on you. If you have only one hive, I would not "go into" it more than about fifty times a day. If you have ten hives, don't "go into" them more than ten times a day. But if you have 100 hives, I would not "go into" them more than three times a day—just to see how the queens are laying, and to see that they do not lay their eggs upside down. If they do, you must take a pointed quill, made something like a pen, and turn them all over. There is no use in having bees hatched out tail end foremost. Such bees always go the wrong way for honey. Now, mind your eye, don't you "go into" them any oftener than I have specified. A colony of bees is not a "monkey show," where you can "go in free" as often as you please.

There are so few things in this world that I don't know all about, that, when I *do* meet with something that I do not fully understand, I am utterly confounded and surprised that I should have missed it. The following questions are asked Dr. Miller, in *American Bee Journal*, page 745:

1. How much sulphuric acid should I apply to a gallon crock full of old combs to take the wax out of the cocoons?

2. Is it injurious to a tin vessel?

3. How is it applied to old combs?

L. H. L.

Answers.—1. I'm not familiar with the matter from experience, but I think about a small tablespoonful to a gallon of water.

2. Yes.

3. I think the wax is stirred in the water, and allowed plenty of time to do its work, then the wax is melted and separated as usual.

From answer 3 it would appear that Doctor M. means to stir the combs in cold water with the acid. Now, that is just what stumps me. I never tried a scheme of that kind, and do not believe that the acid could do any work, so far as purifying the wax is concerned, no odds how long the combs were left in the solution. Refiners use sulphuric acid to cut the dirt and color out of crude oil, and then cut the oil out with caustic soda. But oil is a liquid; and if you want acid to cut the dirt out of wax you must turn that into a liquid. This can be done only by heat. The doctor conveys the idea that the work of the acid is done while the old combs are lying in the solution of cold water and acid. This is the one thing, the only thing, that I didn't know. This is what surprised and astonished me—astounded me so much that I

don't believe it yet, and I will tell you why. You notice the answer concludes, "then the wax is melted and separated as usual." Now, doctor, *there* is where the acid does its work—on the liquid wax; for when would it drive the dirt to the bottom, out of old comb? This process will cleanse the wax if it is boiled in the same water in which it is soaked, because the acid is in it. But it is bad engineering. It will boil over very easily.

Now, Ky, sit down at the feet of experience, and learn wisdom. Here are three things you should not do: 1. Never go near a kitchen stove to melt wax. It is dangerous. 2. Don't melt it in any place where any thing can catch fire, even if the whole country burns down. 3. Never put any acid in until your wax is completely melted—every bit of it, out of your old comb. When it is done boiling, pour your acid in slowly—very slowly—stirring your wax all the time until it is milky—quite milky. When you have thoroughly stirred and mixed it, let it settle. The acid drives all the dirt to the bottom, and in a little while you can dip it out carefully—not going to the bottom of the wax—and run it into merchantable cakes.

I had a scrimmage one time with wax, that will show what sulphuric acid can do. I had a large boiler of wax on the fire (out of doors, of course); and just after putting fresh fuel on I was called to the house. Some lady visitors had arrived, and I, being a great favorite of all my lady acquaintances, forgot all about the wax. After a while I heard the cry of "fire! fire! fire!" I dashed a bucket of water into the boiling wax and on the fire, and several on the surrounding country. It had run in all directions, but had not the strength of mind to get to the top of a mountain that rises behind the apiary. The next morning I gathered up this wax that was burnt as black as night, mixed with sticks, stones, dirt, ashes, shavings, sawdust, and other tinware, and put it in a sack, and treated it just as I have described. The acid sent every bit of dirt and rubbish to the bottom, even the stones. The wax was a clear beautiful yellow, as good an article as a man would wish to see.

A PIECE OF CRUEL SURGERY.

The editor of this paper has cut me in two—yes, he has—without pity and without remorse, without even sending me an invitation to attend the ceremony. If the most famous bee-keeper in the world can be sawn asunder without notice, in this ruthless manner, what will become of you fellows in the East who don't know any thing at all? I would ask, also, what rights will a bee-keeper have if he is cut in two every time he is not looking right at the editor?

That beautiful picture of Skylark—such a perfect likeness—a picture over which our family rejoiced and laughed for joy, is no more—at

least, half of it is no more, for ever. Now, if editors are permitted to go on in this barbarous manner, what shall we come to at last? But I'll settle with *you*, Mr. Editor; wait until I catch you alone.

I read the description of the "dry-weather vine" with keen interest. If this vine turns out as friend Wallenmeyer says, "the hotter and dryer the weather, the more abundant the bloom and yield of nectar," what a boon it will be to bee-keepers in a dry season! But there is one setback to it—it doesn't like land soaked in water for a long time, as was the case in that wet season, with Mr. Wallenmeyer. Now, that will just suit this coast, because we don't care how much it fails in a wet year, for then the honey will flow down the mountains, from our native flowers. As a honey-producing country, this coast needs but one thing more—only one honey-plant more—a plant that will yield a crop of honey in a dry year. With such a plant added to our flora we could beat the world producing honey. We can do it anyhow.

CALIFORNIA ECHOES.

By Rambler.

"He is poor whose expenses exceed his income."

Cost of extracted honey, $4\frac{1}{2}$ cts.; selling price, 3 cts. So the above proverb fits our case. Bee-keepers in California feel very poor.

I make my zwieback of moldy bread, and zwie it out back of the house to the cats. Come over and eat some of my flapjacks, and you will zwieback nevermore.

The hearts of all California bee-men are made to beat happily by the copious rains during the last half of January. Their continuance until May means another good honey yield.

An enterprising bee-keeper of Latona, Wash., has adopted the sensible plan of leaving that wet country during the rainy season and sojourning in the salubrious climate of Southern California. We predict that Mr. Cole and his partner Lomes will eventually have apiaries in this more southern country.

A Straw accuses me of neglect toward Mme. Modjeska, the once famous actress. Modjeska lives in Orange Co., and that is Dr. Gallup's plantation. Dr. G. is fully able to take care of the madam's bee-keeping interests. If I should go over into Orange Co., my experience with Eugenias would lead me to avoid the "famous actress."

I don't like that word "bar," which some one wishes to use instead of perforated metal. It smacks too much of "Will you take suthin'?" You know it is always taken over a bar. Then it is suggestive of the bars of a cow-pasture. Then there are bars at the mouth of rivers. A

steamer rears, and then plunges to get over them. Then, above all, it is a Hinglish term. Away with it! Send it to Venezuela.

If over my own signature I should say that the bee-keepers of California are the most progressive in the U. S., some one would say that I was just booming California. But see here: Manager Newman says that nearly *one quarter* of the members of the Union hail from this State.

There are over a thousand bee-keepers in Southern and Central California. From a few figures sent me by Mr. C. H. Clayton, of Lang, I deduce the following figures: Around the town of Acton and Antelope Valley the average number of colonies to each bee-keeper is 90; taking those figures for a basis, 1000 bee-keepers own 90,000 colonies. Average yield per colony, during the past season, one case, or 120 lbs., or 90,000 cases, or 5249 tons, or 437 carloads. Value, at 4 cts. per lb., \$419,920.

Then just think of the unblushing statement, that half the California honey was adulterated by one firm in Los Angeles. Observe how busy the railroads must have been hauling 437 carloads of stuff from the East to match our pure honey. Then further observe how Hasty, in the December *Review*, lends a helping hand to the "unblushing statement."

The enterprising bee-keepers of Ventura County are disposed to score Prof. Cook, the Rambler, and any other man, who has written anything about three-cent honey. It is a very peculiar state of things, that Ventura bee-keepers have been able to dispose of their honey at not less than $4\frac{1}{2}$ ¢, and even 5 cts., while we in the more southern counties have not been able to sell for more than $4\frac{1}{2}$ ¢, and later the offerings are 3 cts., and good white honey has been sold for that; therefore I do not see the necessity of scoring, for the truth is mighty and must prevail. The A. I. Root Co. also get a little of the scoring for trying to buy honey at 3 cts. Those Ventura fellows are a queer lot, any way.

[We bought one car at 5 cts., and that was all we got. When I told our buyer, Mr. Calvert, that, on the authority of you and Prof. Cook, white honey was selling for 3 cts., he said he did not believe it, and that he would write and find out. Well, he didn't get any such offerings, and now the A. I. Root Co. are in for a scoring for their inquisitiveness.—Ed.]

A NEW USE FOR HONEY.

We copy the following from the *American Agriculturist*:

Considerable quantities of white currants preserved in extracted honey have been imported lately from France, and are selling freely, at low prices, to dealers in fancy groceries. A glass containing hardly a gill retails at 25 cts. Evidently only the best selected white currants are used, slightly cooked—just enough to take off the raw taste but not injure the fine flavor—and preserved in nice extracted honey. This confection is not too sweet, but has the most captivating flavor, and is destined to wide popularity. Here's a point for some one to make a profitable little business putting up such preserves for market.

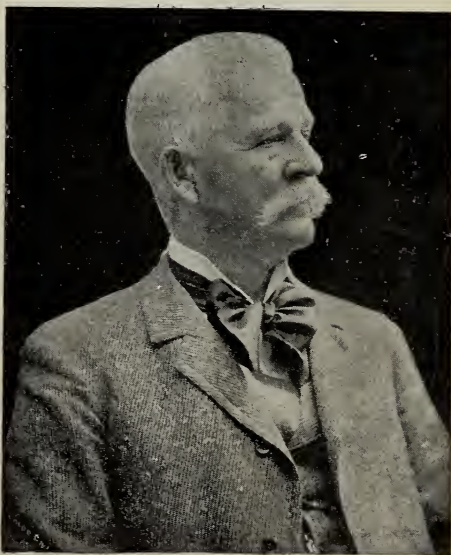
THE BEE-SUPPLY BUSINESS.

A FEW FACTS REGARDING THE GROWTH OF THE VARIOUS BEE-SUPPLY MANUFACTURING ESTABLISHMENTS OF THE UNITED STATES.

By the Editor.

In our issue for Jan. 15 I gave you a bird's-eye view of our establishment, and some facts in regard to its recent growth and improvements. I have for some time cherished the idea of allowing our competitors in business or rival manufacturers to give us a brief sketch of themselves. In the first place, I asked for biographical sketches of each of the *members* of the different firms; but some modestly begged to be excused, on the ground that they rather shrank from such prominence. I gave the matter up for a time, but finally renewed, asking each concern if I might have a biographical sketch of the *firm as a whole*, with photos of the members, and in this I was successful.

In the bee-keeping world, probably no names are more familiar than those who manufacture bee-keepers' supplies. I am sure it will be a genuine pleasure for you all to see the faces of the men and those of their co-laborers who have been making hives and sections. Little glimpses like these make us nearer akin, and I believe they help to make us mutually better acquainted.



G. B. LEWIS.

It is said that men of a trade can never agree. It is not true of the manufacturers of bee-supplies. The pleasantest of relations exist between all four of us. We sometimes run into "red-hot competition," but, so far as I know,

that does not interfere seriously with our good will.

The first firm whom I will introduce will be the G. B. Lewis Co. Their own statement, as is also true of the others, as to the organization and growth of their business, appears with the portraits.

G. B. LEWIS CO.

Mr. Root:—Our business was established in 1874 by G. B. Lewis, and was conducted by him until 1878, when Chas. E. Parks, his son-in-law, came in as a partner. The firm name was changed to Lewis & Parks, and continued so until 1880, when Mr. Parks retired and went into the lumbering business in Northern Wisconsin. From 1880 to 1884 the business was conducted by Mr. Lewis. In 1884 Mr. Parks sold his lumbering interest and again formed a partnership with Mr. Lewis, under the firm name of G. B. Lewis & Co., under which the business was conducted until the spring of 1890, when the plant was destroyed by fire. The original factory was very small, and was run by water power. In 1886 it was enlarged, and the water power improved, and the plant then consisted of a factory 50x86, 2 stories;



C. E. PARKS.

warehouse 40x80, 2 stories, and lumber-yard. In 1890 the present plant was put up. It consists of factory 60x120, three stories and basement; engine and boiler-house, and office. In addition to former warehouse another was put up, 100x30, one story. Two additional lumber-yards were purchased, making three yards, besides which another yard was leased from one of the railroad companies.

In addition to the excellent water power, a 125-horse-power engine was added. The factory is heated with steam, lighted with electricity, and all sawdust and shavings are removed by means of exhaust pipes connected with every machine.

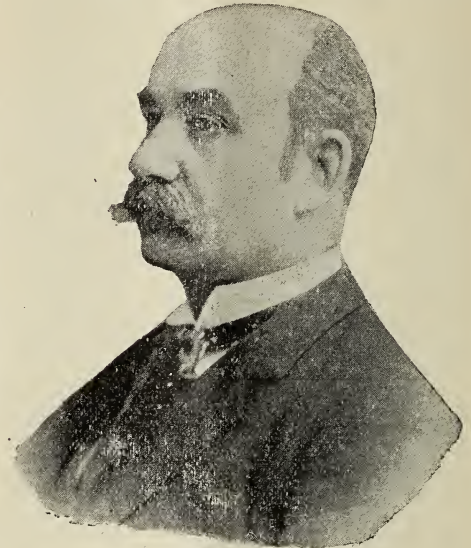
After the completion of the plant in 1890 the firm of G. B. Lewis & Co. was merged into a stock company, under the name of The G. B. Lewis Co. This company has a paid-up capital stock of \$100,000. Mr. G. B. Lewis was president. From its organization until the fall of 1894 the direct management was done by Mr. C. E. Parks; but owing to ill health he was then obliged to retire. His death in the summer of 1895 left the management in the hands of Mr. G. B. Lewis, who is now president and general manager. Yours truly,

Watertown, Wis.

G. B. LEWIS CO.

THE W. T. FALCONER CO.

Mr. Root:—The W. T. Falconer Manfg. Co. was started by Merriam & Falconer in 1880, they being then engaged in the manufacture of sash, doors,



W. T. FALCONER.

and blinds. But a small business was done by this firm in the way of bee-keepers' supplies for two or three years; but the possibilities of the business were manifest to W. T. Falconer, of the firm; and acting upon this he purchased his partner's interest in the supply business and sold out his interest in



D. E. MERRILL.

the sash, door, and blind business January 1, 1883. The volume of business increased in 1883 over four times that of 1882, and for some years either trebled

or doubled. In the fall of 1888 D. E. Merrill was taken in as partner, and the firm name changed to the W. T. Falconer Manfg. Co. (not incorporated), under which name business has been conducted until the present time.

The publication of the *American Bee-Keeper* was commenced in January, 1890.

THE W. T. FALCONER MFG. CO.

Jamestown, N. Y., Jan. 16.

LEAHY MFG. CO.

Mr. Root:—The nucleus of the firm known as the Leahy Mfg Co., doing business at Higginsville, Mo., was started in the spring of 1884 under the firm

stock of \$12,500. In 1892 the capital stock was increased to \$24,000.

LEAHY MFG. CO.

Higginsville, Mo., Jan. 9.

[Besides ourselves, I believe the three firms here represented are the only ones in the country who manufacture a full line of bee-hive material, so far as wood work is concerned. There are others who make some specialties, as, for instance, sections, foundation, or extractors; and later on I hope we may show you the representatives of these. But there is a host of dealers who buy from ourselves and the concerns here shown. Many of these dealers were, in the past, manufacturers; but gradually the business began to centralize into the hands of a few. Some of the smaller ones sold out to the "big guns," and in turn became their representatives or dealers.

Not more than ten years ago, if I had attempted to introduce in this way the members of the different firms which manufacture supplies—that is, a general line of them—I should have had a job on my hands indeed. We then received catalogs from something like 25 or 30 different manufacturers; and now this number is reduced down to a very few, and the catalogs that we now receive are almost exclusively from dealers—Ed.

EXPERIENCE IN PEDDLING HONEY.

A READABLE AND INTERESTING ARTICLE.

By Geo. L. Vinal.

Having a few colonies of bees I started to peddle my extracted honey, putting it into quart and pint fruit-jars, labeled.

Meandering over the country roads, having a day-dream how I could increase the number of my colonies to one hundred and the profits in proportion. I arrive at the first house. Taking a quart jar of honey in my hand, and a pint in my pocket (I mean a pint jar of honey), and rapping at the door, which is opened by the good dame—

"Good-morning, madam. Could I sell you a jar of very nice honey this morning?"

"No: it is strained honey, and I do not want it. I will have a pound of comb if you have it, for I know that is nice."

"No, madam, this is not strained honey. It is extracted, it is—"

"Well, now, you need not talk. That kind of honey is always strong, and I don't want it."

"Madam will you please try this? Just give me a spoon, please." (She tastes.)

"Well, now, that is real good. Is it some you made yourself?"

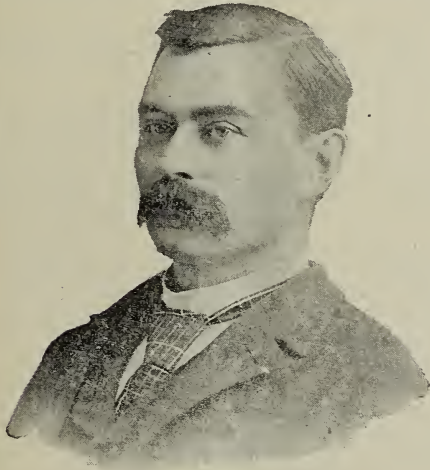
"No, ma'am, it is some my bees made, and I extracted it from the combs. You please read what that says, and you will see the difference."

"Oh, yes! I see. Well, if it is pure I will take it."

She got the honey and I got the money.

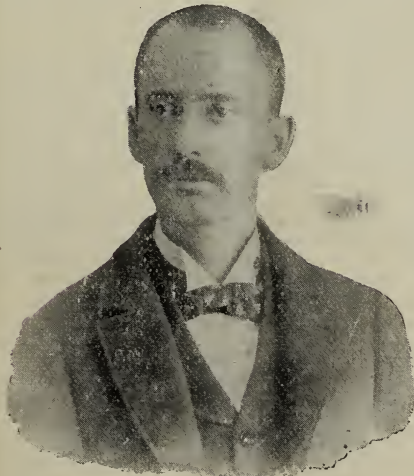
Next house. "Good-morning, madam. Could I sell you a jar of very fine honey this morning?"

"No, you can't honey me with any of that kind of stuff, for I know what good honey is the



R. B. LEAHY.

name of Kennedy & Leahy. Leahy bought out Kennedy's interest in the fall of 1887, and ran the business under his own name for one year. In 1888 Leahy took in a partner in the person of E. B. Gladish, and the business was conducted for two



J. E. GLADISH.

years under the style of R. B. Leahy & Co. In 1890, more partners were taken in, and the business was incorporated as the Leahy Mfg. Co., with a capital

minute I see it, and you can't sell me any of your 'gleu-cose'—not if I know it."

"No, madam, I do not think I can sell a woman who has lived for thirty-five years or thereabout" (she was fifty if she was a day), "for she has lived long enough not to be fooled with glucose; but, my dear madam, will you please try this, and see if you ever tasted glucose like this? Your little boy there would like a taste, I know, madam. Is that your oldest child, madam?"

"Well, now, really, don't I look old enough to be his grandmother, let alone being his mother?" (The cover is off and they are both tasting.)

"Well, really, madam, I should hardly think ou his grandmother."

"Do you really mean it? This is different strained honey than I ever tasted before; and if you say it is pure I will take it."

I said it was pure, and left it.

"Good-day, sir. Would you like a little honey this morning?"

"Well, I don't know as I do. Oh! you are the one who lives over on the Stone farm, ain't you?"

"Yes, there is where I stop."

"Yes, there is where I saw you and your bees as I drove by there. How much a jar?"

"Fifty cents."

Leave four jars, and here is your sugar."

The next is a large house and barn. I rap. The door is opened. A head and face appears with a "don't want any thing."

"Please excuse me, madam; but would you be kind enough to give me a drink of water?" I get the drink, with a "thank you, madam; this is quite a fine day for this time of the year."

"Oh, yes! it is quite nice weather, but too warm to be healthy. Don't you think so?"

"Well, for my part I rather like this weather. I see you have a Southern mockingbird there. What do you feed it on? it doesn't look well. I had one I fed on sunflower seeds and chopped meat, and he did quite well after that."

"Oh! I am glad to know it, for my bird has not done well at all. Have you honey there? I thought when you rapped you were a tin-peddler."

"Yes, ma'am, I have a very fine article of extracted honey—fifty cents a jar. Would you like one?"

"Yes, if it is good honey I will take one." (She got it.)

"Madam, good-morning. Would you like a jar of honey to-day?"

"No, I don't want any made honey. I have made artificial honey myself 'fore now, and I know just how it's made, as I made it over twenty years ago."

"Now, my dear madam, you must admit that the world moves, and that in the last twenty years there have been some improvements,

even in the production of honey; and now, my dear madam, will you please sample this and see if it is as good as you used to make, as I should like to get an expert's opinion on it." (She tastes and smacks and tastes.)

"Well, now, really I must say that is a prime good honey, and I do really wish you would give me the recipe for making it. If you will I will take two jars."

She gets the jars, I get the dollar, and tell her to get a hive of bees.

"I have some fine honey here, madam, that I raised myself. Would you like a jar this morning?"

"No, sir. I do not like it. I can not eat it. It chokes me, and I do not want it." (Bang goes the door.)

Going down the road a little piece I meet a man and pass the time of day—talk about the weather and crops; praise his cur dog, ask about his farm, find he lives where the door was banged in my face; show him the honey, get him to taste it; talk about bees, persuade him he ought to eat honey for throat trouble; convince him it is good for consumptives, having found out his daughter was sick with it; sold him four jars, and since that time he has driven over to my place and bought six more.

"Madam, would you like a jar of honey to-day?"

"Is it pure—real pure bees' honey, or is it some you made yourself?"

"Yes, ma'am, it is real pure bees' honey."

"Well, if it is I will take a jar."

That is about the way I found it. When I could convince the people that it was a good article, I could sell, as a rule; but there were many, many places I could not sell at all. But wherever I have sold I can sell again. I think that, by securing the confidence of the people, we all could dispose of our crop near home.

Charlton City, Mass., Dec. 24.

[I wish we might have more of these experiences in selling honey. Bee-keepers should do less at flooding the market at the great centers where competition is strong, and more at developing a home market. Once peddling honey gives the bee-keeper a reputation, and after that the trade will, to a great extent, come to him, instead of his having to go to it. I fancy friend Vinal gets or will get orders right along from these customers he has been telling us about—even from the "door-slamming ones."—Ed.]

SELLING ON COMMISSION.

SOME OF THE DANGERS POINTED OUT.

By J. S. Hartzell.

For some time past, articles have appeared in the bee-journals relative to the disposal of honey; and many theories have been advanced as to how to obtain prices to justify the producer. Many complaints have appeared against commission men, and well there might be, has

been my experience in more than one instance. Let me here recite one.

A few years ago I forwarded from Confluence, Pa., a lot of chestnuts to a commission house in Chicago, that cost me over *sixty dollars* (prices quoted by them being the inducement). After waiting quite a while (60 days or more) I wrote the firm regarding the matter. In reply they requested me to forward a certain amount of money, claiming the nuts did not sell for enough to pay freight charges. I could name other transactions of the same nature. With all due respect for commission men, and their business if properly and honestly conducted, I would suggest that, unless you are personally acquainted with the individual or firm, you think twice before shipping to them. Once goods are consigned to them you are entirely at their mercy, both as to prices goods are sold for, and returns made for the same to shipper, unless you act as judge and name price goods are to be sold at; and this I have done, and have had prompt sales made, and possibly to my detriment.

Do not understand, friends, that I condemn all as rogues, as some commission men. I believe, are honorable, and some shippers rogues, and *vice versa*. A producer or shipper may undertake to deceive by putting up packages by placing the very best where exposed to view, the inward parts being entirely different. Now, friends, have you ever noticed this in crates of honey? In passing among commission houses, and examining packages of honey, were you ever deceived by outward appearance or style of package as to real merits? You must answer in the affirmative. Now, deception is apparent, and prices obtainable for a prime article must be discounted. Remedy—every package put up and offered for sale should be neat, and not expose the very best, but be of uniform grade throughout; and as a guarantee of its being so labeled, something like the following (which I shall do hereafter) should be used: "This package is warranted to be fully equal throughout to parts exposed to view. Produced and put up by A. B. C.," followed by postoffice address.

In regard to placing on commission, I will emphasize—*don't do it*. For the past three years my own production of honey has passed through a commission house, but not on commission, but by actual sale to the party conducting the business, sales made f. o. b. cars at my station; time allowed purchaser, 90 days. I think all honey now handled on consignment could be sold direct to commission men; but in order to do so the producer must not be *dependent* but *independent* in the way of consigning on commission. Actual sales should be the motto. Now, it strikes me that all business of importance is being formed into trusts, or combines—iron, steel, wire, whisky and beer, sugar, twine, nails, glass, oils, paints, coal and coke—

in fact, all or nearly all important business is under trusts or combines in some form, and prices articles are to be sold at are named by them. Why not honey as well as any other commodity? Can there be a formula adopted whereby our interests can be protected, and a more even rate of prices secured throughout the land, or shall we remain passive, and continue business as in years past? I am not a member of any national or State bee-keepers' congress, association, or union, yet I feel interested in upholding the bee-keepers' interests as far as possible. Come, let us reason together, then act—act judiciously, and I think there can be put in motion ways and means whereby all may be benefited.

Addison, Pa., Jan. 4.

[See editorial comment in last issue.—Ed.]

MARKETING PRODUCE.

HONEY SHOULD BE CONSCIENTIOUSLY GRADED;
EACH CASE OF HONEY TO COMMISSION
HOUSE SHOULD BE STAMPED.

By Edward Smith.

A great deal seems yet to be learned about marketing produce—for instance, honey. It seems that some people like to sham their honey by putting the best sections next to the glass, and filling up the rest of the crate with indifferent grades. Now, this is poor policy; and nothing is gained thereby, but a great deal lost.

I want to say, for the benefit of the inexperienced, that honey intended for market should be carefully and conscientiously classified, crating the dark and light separately. This may necessitate several grades. Then the heavy and light weight sections should be crated separately, and each grade marked on the crate. The net weight should be marked on each crate; then the purchaser, knowing the number of sections in a crate, can get an idea of the weight per section.

When the honey is to be sent to a commission merchant it is well that the name of the shipper be marked on each crate, and each section should have at least the shipper's initials stamped upon it so that it may be easily distinguished from any other lot. Then in case their trade becomes overstocked, and the shipper wishes his honey transferred to some other firm, this would insure prompt and safe dealings, without getting it mixed with other lots of honey.

The 12-pound crates are the best to use, as a general thing. The tare and net weight should be plainly marked on the box that the crates are packed in, and a different box should be used for each grade if practicable.

DISHONESTY IN PACKING FRUIT.

There is also a great deal of dishonesty prac-

ticed in packing fruit. I heard several men say that, when they barrel apples, they put two layers of the nicest and largest ones in the bottom of the barrel, then they fill the barrel nearly full of inferior ones, and again fill the end with large ones. Now, if this is not dishonesty I do know what it is; and, besides, it works to their disadvantage sometimes. For when the apples are received by the commission man, one barrel is opened, and in many instances emptied out; then these are taken as a sample, and the whole lot is judged by them; then if they are not packed "straight" the packer is caught in his own device. The right way to pack apples, which is also a neat and attractive way, is to lay in the bottom of the barrel a circle of the largest ones, then a circle of smaller ones, and another still smaller, until the layer is complete (lay them with stems down); then put on another layer of average apples, and then fill the barrel rounding a little, and press on the lid; then turn the barrel upside down and put on the name and address of the commission man, the shipper, and also the name of the apples. It may seem like a big job to put in the two layers in this way; but I have found out that, by a little practice, one can become quite handy at it; and as they are at the end of the barrel that is always opened when presented for sale, they present a good appearance, without creating an impression that the barrel contains all large apples.

PLANTING BASSWOOD-TREES.

As the season for planting is drawing near, I want to tell a little of my experience with basswood-trees. Last spring I planted thirty, and some were three inches in diameter. I cut off nearly all of the top, made large holes so the roots could be spread out in their natural position, put in several shovelfuls of sand and gravel, then filled in the earth, and tramped it firmly about the roots, and not a single one failed to grow, and many of them cast shoots several inches in length.

Carpenter, Ill.

GROWING BASSWOODS FROM CUTTINGS.

ALSO SOME GENERAL REMARKS AND INSTRUCTIONS IN REGARD TO MAKING CUTTINGS FROM BASSWOODS, MULBERRIES, ROSES, ETC.

By John Craycraft.

In GLEANINGS, p. 643, 1895, I read about how to grow basswood and mulberries. Either will readily grow from cuttings, as will all soft woods, if cuttings are made from ripe wood. For basswood and mulberries, take off this year's growth, soon after the leaves have fallen off. Cut from 8 to 12 inches long; tie up in small bundles; place in damp sand, not wet; for if too wet they will die; and if kept in a warm cellar they will have calloused over by spring, when they can be carefully set in rows,

and covered with a mulch of straw or leaves so as to keep them damp and shaded. They will soon start out leaves and roots, and will grow, if properly cared for, six feet high by fall. I have mulberries that were cut before the freeze of December, 1894, and just stuck into the ground where they are to grow, and covered over with trash. They are now as high as your head, and some of them now have several branches. Basswood will grow the same way. In my garden, which is all sub-irrigated by nature, from one foot to two feet from the surface, I can grow, from the cuttings, mulberries, basswood, figs, pears, peaches, plums, grapes, and all kinds of fruits and woods that drop their leaves in the fall, by making the cuts soon after the leaves drop, and sticking them into a clean prepared bed where the water can rise within about one foot of the surface, and drained so that it will not stand any higher if rain falls much. I stick them about four inches deep, so that there will be from four to eight inches above ground, and cover lightly with straw or leaves. That is all they will need here in Florida, except to keep the mulch loosened up so that it will not settle too compactly.

For evergreen woods, cut mature wood, perfect leaf, and fully developed buds. For lemon, orange, lime, grape fruit, and all the citrus family, cut about 4 in. long or less; two buds cut off; leave next bud of cut, and stick in sand to within one inch, or near the leaf; shade lightly; and, if sub-irrigated, but very few will fail to root and grow. I stuck about 100 roses of a vigorous half-wild rose we have here for grafting. The Marechal Niel rose opened about four weeks ago, and I see scarcely one fails to grow. I will bud them in January, or any time when mature buds can be had. Where you have sub-irrigation, and with it the heat from the waste steam, as you have, you can grow all the shrubs, trees, roses, etc., you desire, from cuts. With bottom heat, clean sand, shade, and a humid atmosphere, there is scarcely a wood, shrub, or plant, but will grow readily from the cut if taken from healthy, mature, developed wood. Nature has provided within every twig the element of self-production, if taken at the proper time. If I mistake not, the basswood does not all bloom prolific alike. Select cuts from the prolific, and you will have like prolific in bloom. Study nature and learn of life.

Astor Park, Fla., Aug. 27, 1895.

[No doubt the above plan can be made a success, even here in the North, in the way of propagating basswoods. There is certainly a great difference, not only in the time the trees bloom, but I think also in the amount of honey secreted. Cuttings made from a desirable tree ought to be worth a good deal more than trees grown promiscuously from the seed. My impression is, however, that it needs some experiment and study to get the conditions just right. Can any of our readers give us further facts from experience in this line?—ED.]

THE NEW CONSTITUTION.

POINTS THAT NEED MODIFYING.

By Dr. C. C. Miller.

You ask, Mr. Editor, on what points the proposed constitution of the North American Union lacks my approbation. Well, I'll tell you, premising that I'm not at all sure I would not have made worse mistakes if I had been on the committee. "But in the multitude of counselors there is safety."

Point 1. In Art. I., notice of annual meetings to be mailed to members besides being published in bee-journals. Is there any need of mailing notices, seeing we've never felt the need of it heretofore? If there should be 1000 members it would make an annual tax of perhaps \$15, and to no good purpose.

Point 2. Art. III., sections 3 and 4, lead to the supposition that the ballots are to be sent to one of the officers, who may be a candidate for re-election. That has been the case always with the Bee-keepers' Union, and I don't know that any harm has come from it; but it isn't certain that it would work with every one else as it has done with Mr. Newman. The thing is wrong on general principles. A ballot is considered better than a *viva-voce* vote, because a man is more free to express his preference than when he does it openly. But if the vote is to be sent to one of the candidates, that freedom is taken away.

Point 3. Section 7 of Art. III. may be all right; but just what does it mean? According to section 1 the president shall preside at the annual meeting; but according to section 7, some other man. According to section 7, a recorder is to do what section 1 says two other men are to do. Will there be no conflict between these three officers as to their duties? Then is a stenographer to be secured additionally?

Point 4. Art. IV. provides for one or more annual assessments. The old Union never had any thing of that kind, never seemed to need it, and the needs seem less now than formerly. Many men will willingly pay a stipulated amount annually who would stay out rather than be in danger of paying an uncertain amount at any uncertain time.

Point 5. The new constitution lacks a very important safeguard that was thrown about the old Union. A man who wanted the Union to back him if he got into trouble had to be a member of the Union before he got into trouble. According to the proposed constitution there is no such safeguard, and I may stay out of the concern indefinitely till I get into trouble, then come in and have all the benefits that the oldest member can have.

When you straighten up these five points I'll see if there are any others. But I want you to

understand that I'm for amalgamation first, last, and all the time.

SHALL TEMPERATURE IN THE CELLAR BE UNIFORM?

After I got that sub-head written I stopped and thought awhile, then I took up the volume of GLEANINGS for 1895, neatly bound in—shoe-strings—sat down in my easy-chair by the Howe ventilator, read what R. McKnight says on page 946, and what P. H. Elwood says on page 852, and said to myself, "Sometimes I think—but then, again, I don't know—and the more I think about it the more I don't know what to think." The fact is, here's one of the things we know little about; and one of my Straws, Dec. 15, contains questions I'd like to have answered. McKnight seems to have gravitated toward a belief that a uniform temperature is a bad thing. I'm loth to accept that, and yet for some time my practice has been to run up the temperature of the cellar at intervals ten or twenty degrees higher than its usual condition.

If I could find out exactly what temperature is best for bees to be held at throughout the entire winter—understand I mean the temperature is not to vary a degree throughout the whole winter—and along with that if I could have the air of the cellar renewed once every 24 hours, I shouldn't worry a particle about doing any thing to wake up the bees for a spell of stirring about. But I run up the temperature of the cellar by spells for two reasons: One is, that the temperature may have been too low, and I want to make sure that every bee in the cellar finds it warm enough to turn over in bed if she wants to. The other reason is, that I want to make sure of pure air in the cellar. If the outer air is below freezing I can't very well air the cellar by opening doors and windows, but I can have it thoroughly aired by making the air so warm and light that the outer air, which is colder and heavier, will crowd in by reason of its specific gravity.

I have an idea that bees are all right—of course, I don't say I know it for sure—if the cellar is kept straight along all winter at the same temperature, and that at intervals they stir about enough to make some little change in their domestic arrangements, then settle down again. I suspect that, in a cellar containing 100 colonies or more, some one of the colonies can be found on the move at any given point of time, and that they don't need any firing-up of the cellar to stir them up, no two colonies perhaps having their "moving" periods at the same time.

Now, I suppose we might find out whether this view is correct. If I had two weeks, with nothing else to do, I'll tell you what I think I'd do. I'd get some one to change off with me, and I'd start in for a siege of watching some eight to twelve colonies. I'd note when each

one of them stirred up, how long it kept stirred up, then how long before it roused up again. Possibly I might find that, with some or all, there was no such rousing-up period. But I'd wonderfully like to have some one find out about it. There's a field here, brethren, that needs exploring.

Marengo, Ill., Dec. 20.

[I believe Dr. Miller's points are all well taken. I know the committee did faithful work, and I thought they had covered every thing; but it appears there are some flaws that need fixing up a little. Now, to give this matter a practical turn, permit me to suggest that the executive committee of the North American request the committee on amalgamation to submit a new report, after considering carefully all the criticisms offered by Dr. Miller and others upon the proposed constitution. I have already laid the matter before the president of the society, and he acquiesces. The officers of the North American are, A. I. Root, President; Wm. McEvoy, Vice-president; Dr. A. B. Mason, Secretary; W. Z. Hutchinson, Treasurer; and the committee on amalgamation, Dr. Mason, T. G. Newman, and J. T. Calvert. I will send marked copies of this to all the persons named, and suggest that they write to the president, signifying their wishes.

I do not want to "run the thing" myself; but I only desire to bring it to a focus so that the North American can at an early date submit a new report to the Union, to be acted upon by that body. I do not believe a better committee can be appointed than the one which acted before; and all that is required now is authority from the executive committee from the N. A. B. K. A. for them to act.—Ed.]

MALTED MILK.

EXPERIMENTS IN FEEDING MILK AND EGGS TO STIMULATE BROOD-REARING.

By F. Greiner.

Langstroth is probably not far out of the way in suspecting malted milk, in connection with honey, to have valuable qualities as a food for bees, especially in the early spring, to induce brood-rearing. In my location, willow, elm, and the maples, etc., furnish an abundance of early pollen, and our bees breed up fully as fast as necessary without stimulating. But since our German friends across the water had so much to say in favor of feeding milk and egg—this was twenty years ago—I tried their method in a somewhat limited way. My bees took the feed all right; and had I continued I might have seen wonderful results, no doubt. This sort of feeding proved with the Germans a most powerful agent to bring colonies to the maximum strength. At the time, I was greatly interested in the articles on this subject, and I keep them on file.

During the years that followed, nothing more in regard to the matter was said in the German bee-journals. This somewhat surprised me, and so I wrote to Gravenhorst about it (in 1886). In his reply he says about as follows:

We in Germany have almost entirely discontinued

feeding milk and egg to bees; it requires the greatest of care and precaution to not cause foul brood to develop by so doing. It also proves to be profitable only with already strong colonies. Less strong colonies are more injured than benefited. I have tried, but discontinued the practice.

It seems to me that our friends over there fed probably too much at a time, and the feed, instead of being consumed at once, as it should have been, was partly stored; decomposition set in, and so the mischief commenced. At all events, it may prove a wise course to profit by the experience of those who have already tried feeding milk, and commence where they left off.

I mention the above to place on guard those who may wish to experiment with the malted milk,* as suggested by Langstroth. To those who need very strong colonies very early in the spring it may prove a good thing.

The question as to "how long may eggs (that would produce a queen or worker-bee) be kept out of the hive, and hatched when subjected to incubation?" is an unsettled one. There is little doubt that much depends upon the temperature they are kept in; and perhaps the amount of humidity in the surrounding air has something to do with it. I believe that, under favorable conditions, eggs might keep for several weeks; still, I do not know these conditions. It would not be unreasonable to suppose that eggs, to be kept, should be freshly laid. After incubation has once begun there will be little chance for any egg to retain its vitality, judging from analogy of the eggs of our domestic fowls. In a whole frameful of eggs, although it may not have been in the hive for more than two or three days, will probably be but few eggs in condition to keep. Drone eggs do not keep long under ordinary circumstances. After keeping them out of the hive four or five days I always had them promptly removed. It may need some careful experimenting to get at the truth of the matter. So far no extensive conclusive experiments have been made that I am aware of.

It is not impossible that the solution of the advanced egg-moving theory may center in a possibility of eggs keeping good for a long time when the conditions are right. I do not think enough evidence has so far been produced to make the theory any more than a theory. However, I do not wish to intimate that an untruth has been reported with any intent. The observer may have been ever so honest and sincere; but may he not have been misled? Many careful and keen observing men and women have kept and are keeping bees, and still such a thing as transferring eggs has not before been observed. To me it does not look possible that so delicate a structure could endure such usage. Examining an egg we find it tightly cemented to the bottom of the cell; and this cement is so tenacious as to prevent

* Please tell us what is malted milk.

any effort to loosen it and have the egg remain intact, unless part of the cell-bottom is also carried away with it. A transferred egg would also have to be secured (in its new place) in a natural position; that is, standing on end at an inclined angle. (It seems as if this would be difficult for a bee to do.) It is a fact, that the embryo in an egg, lying on its side, dies before it could develop sufficiently to break through the shell—in other words, hatch.

Naples, N. Y., Jan. 8.

[I can not tell you what malted milk is. Very likely it is a secret preparation known only to the manufacturers.]

With regard to eggs being moved by the bees, you seem to express some doubt. Quite a number of cases were reported in our back volumes where bees were known to carry the eggs and deposit them in another portion of the combs. In looking over our back numbers I ran across one given in 1883, page 328. I believe I have before reported having myself seen the bees carry eggs. I did not see them take them out of the cells, and was not interested enough at the time to watch to see what they did with them.—Ed.]



AT WHAT AGE DO QUEENS LAY?

Question.—Last season I had a colony that cast several swarms. Ten days after the last swarm issued I looked into the hive but could see no eggs. Two days later I opened the hive to give them some brood, supposing them to be queenless, but now I found some eggs. This would make the queen about twelve days old before laying. Is this common?

Answer.—As a general rule I expect to find queens laying when ten days old; but I have found them laying when only seven days old, and had fecundity delay as long as twenty-four days. The young queen, when weather and every thing is propitious, generally leaves the hive in search of the drones when she is from five to eight days old, the majority going on the seventh day to a successful mating. Some queens meet the drone on the first flight; but the majority fly out and are gone a few moments, to return without mating—my opinion of this being that they fly a few rods from the hive at this time, to carefully mark their location and void their feces. The next time they fly, they go for the sole purpose of their wedding-trip, and they will usually be found laying in two days from this second flight, if the day is fine and drones plentiful. The time of the year and the state of the weather have much to do with the time a queen begins to lay. In early spring or during the fall, queens rarely lay till they are from twelve to fifteen days old; and if a week or ten days of stormy, cloudy, and windy weather should happen to occur when

any young queen is about five days old, she would not even attempt to leave the hive till she was from twelve to fifteen days old. Thus the questioner will see that what he gives is only a common occurrence. Many a queen-breeder has had stormy weather prevent the mating of queens till it would so happen that the queens from nearly all of his nuclei would fly out and begin to lay at about the same time, although such a state of affairs is not to his liking, as it means the destruction of many queen-cells which he hoped to save, and then a shortage of cells when he most wishes them, owing to his being obliged to send off so many queens all at one time.

QUEENS BEING "BALLED."

Question.—Last summer I had two swarms come out very nearly together. The first had a queen with its wing clipped, and the most of the bees had returned when the other issued, this last swarm having a queen with perfect wings. The swarm clustered and was hived in the usual way. In half an hour or so this swarm began leaving its hive and went straggling back to the parent hive. After a little I opened the hive and found a ball of bees nearly as large as my fist on the bottom-board, and in this ball of bees was the queen. Why did these bees act in this way?

Answer.—In this question the writer has touched what has been to me one of the greatest nuisances in natural swarming, for I have had scores of very similar cases. Often, when I was about leaving home for church or some other place, when time was precious, I have had swarms issue, I hiving them with the thought that I had done a nice thing in a little time; but by the time I would get the horse hitched up and all ready to depart, the bees would begin to show a commotion and return to the old hive. If I had hived them on the old stand, as I generally do, they would scatter all over, going into other hives only to be killed, or received according to the condition of the colonies where they went, this often keeping me at home, or making me so late that the pleasure of the trip was nearly or quite spoiled. I have carefully studied into the cause of such procedure, and believe it comes about by a few bees from other swarms or hives entering the new hive with the new swarm; and as these bees are strangers to those composing the swarm, the queen is balled for safe keeping till all get acquainted, or from some other reason best known to beeology. As soon as a queen is balled for any reason, the result is very nearly the same as would be the removal of the queen, which, as all know, is a stampede and general search for her. Failing to find her, their only alternative is to go home, if they would preserve their existence; for staying where they are, without a queen, means that they go out of existence as a colony, when the bees which

make up the present swarm cease to exist, from death by old age, or otherwise. Knowing that the supposed loss of the queen is the cause of the trouble, the only way to remedy the matter is to help them find their queen. This can be done by opening the hive as soon as the bees are seen to become agitated and fly out in the air, and smoking the ball of bees till they release the queen, when a general hum of content will be set up, the bees who have missed "mother" running about with fanning wings, and those in the air returning to the hive with a general rejoicing. This once smoking generally restores quietude with the swarm; but in exceptional cases the bees will re-ball the queen in ten minutes or so, when another stampede will occur, many bees now being likely to go home to stay, so that, do the best we can, our swarm is so weakened that they will be of little profit to us during that season. To obviate these exceptional cases, I made a few large flat wire-cloth cages, large enough so that they would cover quite a large part of the tops to the frames of the hive; and when I had smoked the ball of bees until the queen was liberated she was put in this cage and placed over the frames. As multitudes of bees could now get near the queen, and the whole colony become aware of the presence of the queen among them, no more trouble would occur, the queen being liberated the next morning, when all was sure to go well. A frame of brood will generally hold the bees; but as they sometimes ball the queen till she is injured, I prefer the cage.



DEATH OF MRS. LYMAN C. ROOT.

The sad intelligence reaches us of the death of Mrs. Libbie Quinby Root, only daughter of Moses Quinby, and wife of Lyman C. Root, which occurred at her home in Stamford, Ct., Jan. 16, 1896. Mrs. Root was stricken with paralysis on the morning of the 15th, and died the following morning. She was a woman of rare intelligence; and had she given her attention to literary pursuits would have gained celebrity. She was an easy writer of choice English. Bee-keepers knew her as literary editor of Quinby's Bee-keeping, and later of the same book as revised by her husband. The sketches from which the engravings were made for these works were also from her pencil. She was a natural artist, and in drawing or painting from nature showed genuine artistic talent. Her highest ambitions centered in her home and in the education of her daughters. No matter how busy with household duties, or with the entertainment of visiting bee-keepers,

time was found for the daily lessons of the girls, and also for reading and discussing with the family the best books and literature. In thus giving her life so unselfishly to the improvement of others her own character developed by the maturing of those qualities of mind and heart that must endure for ever. It is gratifying to be able to state that the husband and family fully appreciated her many excellent qualities. Her presence, her sympathy, and her counsel will be sadly missed in the home circle.

Bee-keepers everywhere in the English-speaking world will unite with me in extending heartfelt sympathy to the husband, daughters, and aged mother Quinby. P. H. ELWOOD.

Starkville, N. Y., Jan. 22.

RHUBARB, OR PIE-PLANT, IN FLORIDA.

A year ago, when I was leaving my home to take a train for Florida, a friend called with a basket of pie-plant roots for me to take with me. My baggage was then at the depot. I filled a paper-box, and took them with me. When I arrived at Pensacola I stopped at a hotel kept by a former resident of St. Andrews. I apologized for carrying the box in my arms, saying that a friend brought me pie-plant roots after my packing was done. She said, "Oh! give me one. I want to try one here—just one, no more." When I lived at St. Andrews I tried a dozen times to raise it, and failed, and I want to try it here. It would come up and grow nicely, and I would think I'd soon have a pie; but I never did. I noticed that the leaves would fall over, and, digging down, could find no root. It had disappeared, I know not how.

A lady at St. Andrews, who is setting out some plants, told me she lined the hole with broken glass to keep the moles from destroying the root. I thought I would protect my pie-plant in that way. I dug holes, and lined them with glass, filling with fertilizer and rich soil. I planted the roots, covering the tops with oyster-shells, congratulating myself that I had outwitted the moles. They grew finely, and attracted much attention, and I was frequently asked, "When are you going to have a pie?" But the *pie* never materialized. First one leaf and then another fell over on the ground, looking as if cut off close to the root. I examined it closely, but I could not discover what destroyed it. Some said it was a worm; but I failed to find any, or any thing else. I'm told that it can be grown on titi or swamp land that has been drained and reclaimed. I hope that our friend at Tarpon Springs, Fla., will continue to be "tickled" over his rhubarb, but I'm a doubting Thomas.

The winter here has been cool, cloudy, and much rain has fallen. It is pouring down, and has been for two days. A warm sunshiny day is appreciated.

The gardens contain lettuce, radishes, onions, and turnips, and should have beets and cabbages. Gardeners say that it was too dry in the fall to raise the plants. A. I. R. would have managed to raise them. Strawberries and peen-to peaches are blooming. The peen-tos are silly. They may get frozen for their precocity.

MRS. L. HARRISON.

St. Andrews Bay, Fla., Jan. 22.



THE result of the election of officers of the Bee-keepers' Union shows that all the old officers were re-elected. The names stand as follows: General Manager, Thomas G. Newman; Pres., Hon. R. L. Taylor; Vice-presidents, Prof. A. J. Cook, G. M. Doolittle, Dr. C. C. Miller, Hon. Eugene Secor, A. I. Root. The question of amalgamation with the North American will be submitted later.

SEVERAL of our subscribers have called our attention to an article in a recent number of *Green's Fruit-grower*, where an editorial footnote seemed to not only pronounce the bees a serious hindrance to fruit-growing, but also recommended fruit-growers to hang up bottles of sweetened water to destroy the bees. In view of this we are pleased to see the following from the editor:

Dear Sir:—Thanks for your letter, which we will publish. The article you refer to was not written by our editor, who is a friend of bees.

Rochester, N. Y., Jan. 16. GREEN NURSERY CO.

IN writing upon the question of building up colonies in the spring, Dr. Miller offers, in the *American Bee Journal*, this very sensible advice, and I give it right here because so many make the mistake every season of trying to strengthen up weak colonies instead of turning what little strength they do have toward the strong:

Whatever you do, *don't* try to build up weak colonies by giving them brood and bees from stronger colonies; for, although the weaker colony will gain by it, that gain will be more than counterbalanced by the loss of the stronger colony. Rather take from the very weak, and give to those that are of medium strength. Indeed, it is not a bad plan to break up entirely the very weak ones, and unite them with the stronger; then later in the season you can more than make up your number with what the strongest can spare.

IN our last issue, page 111, I referred to the practice of some commission houses, of quoting higher prices than the market justifies, in order to get consignments. If any of our people—that is, those who make quotations in our Honey Column—make a practice of this, I hope our readers will give us the names at once. If they persist in the practice, we will simply drop

them. If bee-journals and bee-keepers unite in this I think we can put an end to what has been working a great injustice for years back. When a bee-keeper sees quotations at so much, he ought to have reasonable assurance that he will be able to obtain about that figure. Of course, I appreciate the fact that a good and honorable commission house may be deceived, and not able to realize what they *think* they can get. Well, then they should make their prices conservative; and then if they can do better than they promise, they can rest assured that next time they will be patronized again.

MORE SUCCESSFUL MAILING OF QUEENS TO AUSTRALIA.

WE are getting excellent reports of shipments of queens to Australia. In our issue for Oct. 15, p 774, we illustrated A. E. Manum's cage for export purposes. This, you will remember, contained the usual candy-holes, and in the center an oblong space in which a small amount of sealed honey was placed. The object of the sealed honey was to act as a sort of relay if the candy should fail to be a suitable feed. Well, we used these cages exclusively on the last shipment; and if success in mailing means any thing, the addition of a honey-hole is a decided hit. Oh, no! it is not a new idea, because honey was used before the Good candy. As I have told you a number of times before, we often have to go back to old things in order to improve on some of the later good things.

HORN-BLOWING.

PERHAPS publishers who also manufacture supplies are justly accused at times of blowing their own horns. If we have done it in our case we have allowed some of our competitors, not exactly to blow their own horn, but to tell of their own progress in the manufacturing business. Yes, we even let men who have particular hives and fads praise their own goods at the expense of our own. Witness, for example, the article by Mr. Danzenbaker, in our Trade Notes for Jan. 15. In next issue (see Trade Notes) I shall take particular pleasure in referring favorably to a style of hive that we do not manufacture, and possibly never shall. When GLEANINGS gets to the plane when it allows nothing but one kind of hive or section to be boomed, and that the hive and section of its publishers, I shall feel that its day of usefulness is gone; and so long as I have hold of the editorial reins of beedom, I desire to have every good idea given a reasonable space.

MY MEAT AND YOUR "STUFF."

WE are giving our readers a large range of reading-matter; and while some of it may be regarded as "stuff" by some, it is impossible that all of our large constituency should place an equal estimate upon every thing that we publish. We put on full headlines, and, like

the one who sits down to a table filled with good things, we expect each reader to select those things which are to his liking. I do not expect, for instance, that the bee-keepers of Florida will care for the subject of wintering, neither do I expect the bee-keepers of Minnesota or Vermont to be interested in how to get rid of a certain kind of ant and other pests that trouble bee-keepers of the South. But locality does not altogether give us a division of tastes. One class of readers may be interested in every thing that is said regarding California and its phenomenal honey-yields. Another is anxious to know all about the subject of large and small hives. Another eagerly devours every thing on greenhouses and gardening; and still another, Home talks, and hints on health and health-getting. What is my meat may be another's poison. What may be "stuff" to me in the way of reading-matter may be exceedingly interesting and profitable to another. If one does not like to wade through what to him is "stuff," let him go over it (headlines) at a hop, skip, and jump, and settle on that which he does like.

TAYLOR'S EXPERIMENTS IN HEATING HONEY.

THE following card came to hand from our friend R. L. Taylor, which will explain itself:

Friend E. R. R.:—Do you wonder that we get out of patience with editors sometimes? Well, I think you won't when you remember that at least twice in GLEANINGS you have intimated that my experiment in heating honey proved nothing because there was wax with it; when, if you had read my account of it entire, you would have seen that the wax was removed at 165°, when there was but a very slight change in the honey.

R. L. TAYLOR.

Lapeer, Mich., Feb. 6.

On receipt of this card I turned to the December issue of the *Review*, and I find that friend Taylor does say this: "The heating process then continued to be applied gradually to the remainder till its temperature reached 165 F., when both honey and wax were melted, and a sample of the honey was again taken after the removal of the wax. The temperature continued to be raised, and samples of the honey were taken at temperatures of 185 and 200° Fahr." To make sure that I made no mistake I remember of reading the latter part of the article over three times; but I did not then construe the sentence just quoted as it is interpreted in Mr. Taylor's card—certainly not as applying to 185 and 200° F. I must have taken it that a small sample of the wax and honey was taken when it was raised to 165 degrees; that on cooling, the wax was removed, and the honey tasted. It doesn't seem to me from the quotation that it is clear that the wax had been removed from that which had been raised to 200° F. But I see that Mr. Taylor meant the other way, and perhaps I was a little careless

in construing the sentence as I did. At all events, it is unfortunate, I think, that the honey tested should have been *comb* honey, when it would have been so easy to get extracted.

We make a business here of melting wax, ton after ton of it every season, and know something about the effect of heat upon wax at various temperatures. For a couple of years we have been doing quite a little in the way of melting up old discarded combs containing honey in solar wax-extractors. In the large Boardman, with a single glass, the temperature seldom rises much above the melting-point of the wax; but we assume that it may rise to 165. All such honey, when taken out, has quite a preceptible flavor of wax; but perhaps Mr. Taylor will say this would prove nothing, because his honey at 165 underwent but a very slight change; but however slight it might be, I should say it was due almost wholly to the fact that the honey had incorporated something of the properties of the wax. These properties would make themselves more disagreeably manifest at higher temperatures. Or, in other words, the properties of wax that might have been incorporated in the honey at 165° F.—sufficient to have affected the honey slightly—would, under a temperature of 200, become quite pronounced, even assuming that the bulk of the wax, or such as could be taken out, had been removed at 165° F.

Again, we note that honey has a wonderful property of absorbing flavors from surrounding bodies. We have to be careful what kind of barrels we use, or else the extracted honey will taste woody; and the bee-keepers of California know to their sorrow that the square oil-cans, even when thoroughly washed out with hot soda and water, will impart to honey some of the coal-oil flavor. Wax melts at 145; and from that point up to 165 it could impart to honey heated with it a considerable of its properties in the way of flavor and coloring-matter. This same flavor and coloring would be intensified at higher temperatures.

In view of what Mr. Taylor has said in his card, I will not go so far this time as to say that his experiments prove nothing; but I will say that they would have been much more satisfactory if he had used honey entirely free from wax. I can not help feeling that the result would have been considerably different had he used that. It is to be hoped that, in the near future, as the experiment is so easily tried, he will test the thing again. Our own observation has satisfied us that extracted honey is not injured when brought to a temperature of 180, and then sealed in glass cans. Some of the finest and best-flavored honey we ever had was this very lot.

I grant, friend T., that editors are provoking. Well, I want to offer a professional secret: Once in a while we wish that we could re-write what

we have once said; but in this one case I don't know that I should wish any thing unsaid *providing* it will cause further experiment.

ADULTERATION ON THE INCREASE.

In our last issue, page 113, I referred to the fact that adulteration of honey, on the part of preserving and syrup companies, seemed to be on the increase, owing to the apathy and "hush-up policy" of bee-keepers in general. I also gave at that time a sample letter from one of the preserving companies, asking if we had empty comb for sale, from which the honey had been extracted; that they wanted to use it in "selling strained honey." Since that time, another letter, quite in line with this, has come to hand, and I give it for what it is worth, omitting the name of the company.

The A. I. Root Co.:—Do you furnish or manufacture artificial comb not filled with honey? There is considerable sold in tumblers—that is, a piece of artificial comb is placed in tumblers and then filled up with strained California honey. If you can give us price, method, and particulars as to how to go about it, we believe that we can sell considerable. Awaiting your reply we are

Yours truly,

Feb. 1.

By the heading they make a specialty of preserves, mince meats, and "refined syrups." It seems to me it is perfectly evident what these people propose to do with the honey-comb. Strained honey! nonsense! They may use a little of it, but I suspect glucose will be the principal ingredient to surround a little piece of comb—the only honest part of the whole.

Two letters like this have come to hand within a couple of weeks; and from reports of "cheap honey" for sale at the groceries all over the country, it is more than evident to me, at least, that the adulteration of honey is gaining on us, and just because there are a certain few who feel that we ought to hush up and stay hushed up, because, forsooth, so much talk and clatter will injure the honey business.

Now, there is no use, it is true, in howling about adulteration unless bee-keepers *do* something; and one of the first things is to petition your members of the State Legislature to pass laws forbidding the adulteration of honey, syrup, or any other product—if there are not already such laws on the statute-books. Some States have fairly good pure-food laws; but the majority of them are sadly in need of doing something against this wholesale adulteration.

Then, of course, bee-keepers can do something more: suggest ways and means for the Union to take hold of these cases. When it (the Union) becomes reorganized again, it can work toward the passage of such laws as I have spoken of. It has done a grand work in the line of defense of bee-keepers against unjust legislation, and here is open another grand field in securing the passage of laws in every

State of the Union, designed to protect pure honey from unjust competition.

THAT BEE-BOOK BY FRANK BENTON; DUTIES OF BEE-KEEPERS AT THE PRESENT HOUR.

In our issue for January 1, I gave notice of the publication from the Agricultural Department, Washington, D. C., a bulletin by Frank Benton, entitled, "The Honey-bee; a Manual of Instruction in Apiculture." At that time I stated that 5000 copies were to be issued, and that they would be for free distribution to everyone in the order in which the requests were received. It seems that an order on the public printer was made for 5000 copies, but there was a limit to the appropriation, and so the edition was reduced to 1000. These were sent out as far as they would go, and now I understand there are 1500 applications for the book, which can not be supplied. Representative Wadsworth has introduced a bill, which, from present indications, seems likely to pass, authorizing the public printer to get out 20,000 copies—5000 for the use of the Senate, and 12,000 for the use of the House. While it is likely to pass, it will not do so unless bee-keepers petition their members in Congress. In relation to this, Hon. Geo. E. Hilton sends in the following letter which will explain itself:

Friend Ernest:—Will you please, through next issue of GLEANINGS, urge all bee-keepers to write their Senators and Representatives at Washington, to support House Joint Resolution No. 92, providing for the printing of 20,000 more copies of Mr. Benton's Bulletin, "The Honey-bee"? and if an amendment is offered to make it 100,000, to support the amendment. I am pulling every string to get these printed for free distribution. All my Senators and Congressmen have promised me their support, and others will do the same if they are appealed to by personal letter. I have told them there are 300,000 bee-keepers, and we should have 100,000 copies. Everybody write, and they will think there is a million of us.

GEO. E. HILTON.

Fremont, Mich., Feb. 6.

It only remains now for bee-keepers to do their duty. Let the government know that we are not a mere handful—that, when we ask for a thing, if we ask unitedly, we are a big army. I am well aware that the general distribution of this book to the extent of 100,000 copies might seriously interfere with the sale of *our* book. All right. If we put aside all selfish interests we should wish for the general dissemination of facts and figures about the bee-keeping industry—in short, how to keep bees. All this, and more, is set forth in Mr. Benton's admirable work. If the government will issue a generous edition, which I hope it will do, it will do more for bee-keepers than it has ever done before.

Should the bill pass, authorizing more copies of the book to be printed, write to your representative in Congress for a copy. Write him any way, and so get in line with your order. *Please don't* send to us, as we can't supply them.

OUR HOMES.

SICKNESS IN THE HOME—CONCLUDED.

Of course, Dr. Lewis, of Cleveland, was consulted in regard to the patient. I had talked with him in detail in regard to malarial fever. He said I was right in my conjecture that a person *could not* take malarial fever, or hardly any other fever, while the system is kept in healthy working order on a diet of lean meat. Mrs. Root had scarcely tasted of the meat she was cooking daily for the rest of us for many weeks. She said her appetite craved something else. You will remember that, while I was in Portland, Ore., I had my second attack of malarial fever, and I told the doctor I could not bear meat. I constantly craved fruits and something sour. He said it was a morbid appetite for the very things that were hurting me. When we asked Dr. Lewis in regard to the choice of a physician, he said the allopathists and the homeopathsists—at least the progressive ones—were falling now into nearly the same line of treatment, especially for fevers. Let me give you a little illustration:

Forty years ago I was taken sick while in the store. I went home, and sent for the doctor. He was an old gray-headed veteran. He said I was just coming down with typhoid fever. I have always been on pretty good terms with doctors. He and I had often talked the matter over before, and he said he could break my attack promptly if I was willing to take calomel. He frankly acknowledged he did not like to prescribe it; but he added something like this:

"Mr. Root, we doctors have counseled together, and talked this matter over; and the general verdict has been that, where we try to doctor without calomel because the patient or the friends object to it, the patient dies; but where we administer a proper dose of calomel when the disease has just set in, as it has in your case, they get well."

The doctor in Portland, Ore., tried to get me up on my feet with milder remedies; but he, too, finally gave me some preparation of mercury. When Mrs. Root had symptoms that indicated typhoid fever, I talked the matter over with my homeopathic doctor, and he surprised me by saying, "Why, bless your heart, Mr. Root, homeopathic doctors—at least the sensible ones—do use mercury. If not in the form of calomel and blue pills, we have the same agent in a better and safer form. Mrs. Root is taking mercurial medicine now."

Of course, I felt satisfied; and, more than that, I felt thankful to know that our skillful physicians are getting into a beaten track; and may God grant they will get to a point where one school will have enough of the grace of God in their hearts not to call everybody of the other school a quack, and pitch his medicines out of the window whenever they have a chance. Yes, and I may thank God that ministers of the gospel are getting so they too can shake hands, and not only *call* each other brother, but exchange a brotherly greeting that comes from the bottom of the heart.

You may ask what all this talk has to do with the homes where GLEANINGS goes. Has it not occurred to you, dear brother, that there is a message in it for *you*? You may have been called upon to bear with sickness, affliction, and possibly even death, and you may not. In either case I bid you to remember the words of our text, "I will make him a helpmeet for him." I have told Mrs. Root many times during her married life, that, among all the good and precious and gracious gifts God has seen fit to give poor unworthy me, there is none that I

prize as I do her precious self. Dear brother, have you not said as much to your good wife, your faithful helpmeet, your untiring, dear, and loyal partner? Why, the word "loyal" has *always* been a pleasant one to me. I like to see Americans loyal to the stars and stripes; I like to see them loyal to the laws of the land; I like to see the Canadians loyal to their queen; I like to see workmen loyal to their employer; yes, and I want to see the employer loyal to his helpers—loyal in the best sense of the word. But, oh! above all I do love to see *husbands* and *wives* loyal to each other. Most men are loyal, I believe—that is, they are loyal after a fashion. "May God help them!" This last little prayer came of itself, as it were; but the women—oh may God be *praised* for the wives and mothers! It seems to me a woman must be a mother, or at least have a motherly feeling in her heart before she can truly comprehend the great need—the *tremendous* need—that *she* should be loyal—loyal to the home, loyal to the children, loyal to the husband. And while I think of it I *do* believe the wives and mothers are the best illustration of the word "loyal" that the world has ever seen. What patient, untiring, unremitting loyalty is theirs! Whether the husband be loyal or not; whether they ever get a kind word or any token of appreciation or not, still they are loyal and true and unwearied. I wonder if we ever think of that old familiar text, "Be not weary in well doing;" and I wonder if the husband ever thinks of the latter part of it—"In due time we shall reap if we faint not." Dear husband and brother, let me urge upon you the importance of seeing that this latter part be fulfilled. Let the dear wives see the crops *they* are reaping—the grown-up boys and girls that are beginning to be *loyal* in a boyish and girlish fashion to their mothers. It did me good to see the children of our household, old and young, married and single, son-in-law and daughter-in-law, each one begging for something to do or for some burden to bear—something for the suffering mother of the household, and almost mother of the neighborhood.

Well, what has been the effect on myself? Am I a good deal better man—at least in the home—than I was a month ago? I hope so; but almost every hour reminds me of the first line of a little hymn my father used to sing: □

Prone to wander—Lord, I feel it.

"Some of my friends scold, however, when I confess my shortcomings before the world, as they put it. Well, they need not scold just now, for my sins of the present are mostly confined to those of omission, or forgetting myself. I believe that, since mother is able to be around the house, and to sit with us again at the table, I have been more gentle, more kind, more careful about rushing into the house without waiting to clean my feet or put on my rubbers when I go out. I am sorry to say I do sometimes get "stirred up," and speak hastily, even yet; then comes the thought of those days and nights of watching and suspense; and the brief prayer wells up, "Lord, help!"

I must tell you of one little circumstance that I forgot. I think the crisis in her sickness was during our coldest night, just after New Year's, when the thermometer was down to 5 below zero. The doctor directed that the temperature of the room be kept as near 65 as possible, and at the same time she must have air from outdoors. Rather late we succeeded in getting her to sleep, and I went upstairs to bed. As soon as I was fairly sleeping soundly, however, the nurse called me for something needing me personally. I went back to bed, and was almost (or quite) in the land of dreams again when I

heard the fierce zero wind whistling through the attic. Let me explain that, while our house is warmed mainly by means of hot water from the exhaust steam from the factory, we have, during the past winter, put in a furnace heater to reinforce the water-pipes on Sundays when the factory is not running, and during severe weather in winter. In the attic is a soft-water tank, or standpipe, for the hot-water pipes. Just as I was getting to sleep it occurred to me that this fierce wind, with the low temperature, might possibly freeze over the standpipe. Then if we should fire up the boiler in the cellar the pipes would be bursted, and the house would be flooded with water at a time when such a catastrophe might turn the scale between life and death. I climbed up into the attic in my night clothing. My teeth were chattering before I reached the tank. Sure enough, it *was* frozen over. One blow with my fist, however, broke the ice, and then I went down precipitately to the cellar to fire up the heater; but when I reached there I remembered that the sick-bed was in the room just above. The clatter of shoveling coal and handling the furnace might awaken the patient. I picked up lumps of the hard coal with my fingers—enough to make a huge fire that would last until morning. Then it occurred to me that the tank in the attic would stand a very much better chance if it were covered with some carpeting I knew where to get hold of. By the time this was done my teeth were chattering again; but as my sleeping-room had a radiator in it I was soon comfortably warm.

To be sure that all my racket had not disturbed and worried the patient, I stole down once more to the sick-room, and my heart was gladdened on finding not only the nurse sound asleep, but the dear wife was breathing almost as quietly as if she had not been sick at all; and then another prayer of thanksgiving and praise went up to the great God above. For many days and nights before, even in her sleep, there had been groans of distress from the pleurisy, and incoherent talk from the delirium, that was plain to be heard, even in the dining-room.

Next morning, when I told my adventures of the night, Mrs. Root said, "Why, you poor dear husband, it was really *wicked* to disturb and weary you like that. I think I must have been out of my head when I told the nurse to wake you up. Since you speak of it, I have only the faintest recollection of something of the sort." Then they all wondered when I told them that my night experience had been an *exceedingly* happy one. It was a happy one because I was enabled to do service that gave relief and sleep to the dear wife; and when I woke up at intervals it was not with that disturbed and awful feeling that I had been having for so many nights before. Let me explain: After the worry and anxiety of the day I would quickly fall into a sound sleep. This will apply to my daytime naps as well as to my sleep at night. When I first wake up it is almost always with a feeling of light-heartedness, joy, and thankfulness; but during this period of uncertainty and anxiety I would wake up as usual, and then would come the feeling, "Oh! what is it—that dull heavy load, that awful dread that was with me when I lay down?" Finally the sad truth would burst upon me, "Oh! it is the dear wife;" and then the burdens and care and anxiety settled themselves down upon my shoulders as before. But God in his gracious mercy has seen fit to give her another lease of life, and in so doing has given me back again that precious gift, the greatest gift God ever gave to man, a "helpmeet."



RATS AND MICE, PIGS AND CHICKENS.

Some of you may wonder what the above heading has to do in the department for High-pressure Gardening. Well, it has a good deal, as you will see when I get to the end of my story. Some years ago I visited a very fine country residence; and the owner, in showing me over his premises, marched us into the kitchen or dining-room. Said he:

"There, friends, do you see any flies about here? There are no screens up, and the doors and windows are wide open."

We were obliged to confess that we did not see any; and yet their absence during an August afternoon was so unusual we asked for an explanation. It was something like this:

"Boys, the flies do not come here, because we take great pains to leave nothing around that can bait them. See here! The place where we wash dishes, and every thing that might attract flies, is inclosed fly-tight. These lids shut down as you will notice, so that every thing is so quickly out of the way the flies have not time to get baited and congregate here."

You see, it is something like letting bees start robbing. I am not sure that flies go back to their home, and bring others along with them, but they operate much in the same way. It is a shame and a disgrace to have a kitchen or dining-room blackened up and disfigured by flies or flyspecks. Why! if a body is ever excusable for committing suicide, I have sometimes thought it might be the one who is obliged to live and stay constantly in the presence of such filth and annoyance.

Well, I did not start out to write about flies, so we will switch off by remarking that rats and mice come under the same category. If you do not bait them or leave articles of food exposed they will not be around. Some of the young friends here on our premises look at me in astonishment because I make a fuss when somebody spills corn, wheat, or other seeds, that mice are fond of, and I suppose they think I am getting to be a fussy old man when I complain if they do not get *every kernel* when they go to work to sweep it up. But I think my head is level, after all. We have no rats or mice in our seed-room; and yet great quantities of seeds and bags are piled up everywhere. We had so much alsike and buckwheat, however, that it had to be carried into a distant building for storage, a few days ago, and pretty soon I was told the mice were just riddling the bags. The cat and bisulphide of carbon were called into play, but still the mice bothered us. Finally we made a platform of plank laid on some tall stone corks, and the sacks of seed were stacked on this platform. Now they are untouched. Then somebody said there were mice in the machine-shop. I directed the boys to get a dozen traps and set them all over. Then somebody said there were mice also in our new upper saw-room, where nothing but lumber is used. What should mice be doing in such places? Why! some of the friends, may be the newer ones, while eating their dinner, carelessly scattered the crumbs, or perhaps threw their vands on the floor, or into a basket of shavings.

Now, I hope all our helpers will read this; and I hope they will help me in carefully saving every scrap and crumb left from dinner. What shall be done with it? Well, if they will

take the trouble we should be very glad to have it put into our slop-pail near the door of the kitchen, and said pail is emptied every day or oftener. It pays us to carry these scraps to our chickens; and it would pay you, my friend, not only in the way of keeping away mice, but in utilizing the waste product. If you have no chickens, get enough to use up all the scraps and waste of the tables; and then make sure that every thing that a chicken will eat gets to the chickens promptly. Potato-parings and cull beans, etc., should be boiled and made into a mash for the biddies. It will not only pay, but, when you get used to it, it is a great comfort to see every thing slicked up, and neat and tidy, and utilized. "Gather up the fragments, that nothing be lost," as our Savior enjoined in olden times.

Now you see, probably, what *role* the pigs are going to play at the close of my story. They not only take what the chickens can not use, but with the market-gardener he can give them all the refuse from the garden. When it comes "pussly" time, if you are so slack that these or other weeds get big enough for pigs to eat, have all these carried promptly to the pigpen. You must not say it will be too big a job, for that might let out the secret that you sometimes let the weeds get large enough to endanger the plants.

A year or two ago I sold my two pigs, that were raised and fattened almost entirely on waste products from the garden, for over \$60.00. Last week the butcher paid me \$36.00 for two pigs, although pork was down to only 4¼ cts. per lb., dressed. Now, a great part of the time these pigs had absolutely nothing whatever but the waste from the kitchen and garden. I once gave a boy a Waterbury watch for two little pigs, and they had absolutely nothing for a good many weeks but the refuse from the gardens—mostly the refuse from our Jersey Wakefield cabbage, that we were selling every day. We just piled the leaves up around the little fellows, and almost covered them up sometimes, and they were both feed and drink. Before I knew it, the boys hadn't been carrying them any thing else—said they did not need it.

Now I have told you what we got for our pork; but I have not told you what we got for the *manure*. At the present time the pigs are in part of our covered tool-shed, where so much trash is given them, especially if there is a surplus, that the pen is very apt to become untidy, unless a good deal of strawy manure is constantly shoveled into the pen to keep it dry and clean. As they are located just back of the horse-stable, the manure is pitched over for them to root over; and the product is a first-class article of manure, rooted over so constantly that it does not have any time to heat and get fire-fanged. Our pen is so large and roomy that we can throw in a dozen loads of stable manure before it is cleaned out. When we get some new pigs we clean the pen out away down a foot or more below the surface of the ground. You see, our ground is thoroughly underdrained, not only around the barn and pigpen, but the tiles run right under said barn and pigpen, so the little pigs in winter time have a very snug bed in stable manure, down below the surface of the ground; and when we want the manure to raise the Hubbard squashes which I have been talking to you about on another page, or for any other purpose where we just want to make the crop "get up and climb," we go to the pigpen for our worked-over compost.

Now then: If there is any waste going on about your home or on your farm, have one or two pigs, or enough to take up the waste, any way. If you live in town, and work in a factory, have some chickens, say two of them, if

there is not any more waste around your home than two will consume, and see that the chickens have every scrap that might go toward baiting rats and mice if you don't have the chickens; and if you really want to enjoy your home, work the thing down to such a fine point that even the *flies* will go off thin and hungry, and betake themselves to some neighbor's premises where flies have a better chance. Read this to your wives, and ask them if Uncle Amos is not level on the whole matter.

A NEW KIDNEY WAX BEAN.

In looking over the various seed catalogs for 1896 I was pleased to notice that the greater part of them had a new wax bean, originated by our old friend Eugene Davis, of Grand Rapids, Mich. I sent for a sample of beans, and found that it is a kidney wax bean, entirely white. When the Wardwell kidney wax first came out it was claimed it would answer for either a snap bean, green shell bean, or for a dry bean for cooking. There is one trouble, however. It is a little bit "speckled," and a good many people don't want a speckled bean for table use. This is just a notion, and I have protested that it is ridiculous that people can not have baked or boiled beans unless said beans are entirely white all over. But we had to give way to public prejudice. Well, friend Davis has got a wax bean that is *all* white, even when it is mature and dry. It is claimed, also, that it is extra productive, and the beans are extra fine and large, besides. This latter part I have not tested; but I have asked friend Davis to tell all he knows about the bean, and here is his reply.

Friend Root:—Five years ago I noticed one bean-plant in a patch of Golden Wax beans, just beginning to pod, that had a larger vine and the pods were much longer, and more of them, than the others. I stuck some stakes around the plant, and cautioned my men not to disturb the plant, as I was sure it was something different from what I had ever seen. When ripe there were thirty beans, pure white in color. The next year the increase was about a peck. Not being posted on the different kinds of beans I began to make inquiries of different seedsmen to find out whether I had something new or not. One told me that they had a bean like it once, but had lost the seed; that it was something new, and a good thing. The third year I came near losing the seed, when I sold it to the introducers, who grew a thousand bushels last year.

They should not be planted as closely as other beans. One bean in a place, four to six inches apart in the row, is close enough. EUGENE DAVIS.

Grand Rapids, Mich., Feb. 3.

There, friends, if any thing else has been wanting to convince us that friend Davis is a careful, conscientious man, we have it in the above. He has been invited to tell in print what he knows about the bean that he originated; and just notice how modest his claims are! I wish the venders of new and untried things might, a great lot of them, copy his example.

HOT-BEDS HEATED BY LIVE STEAM INSTEAD OF MANURE.

Most of our friends will remember what I have said about steam-heated hot-beds belonging to the Lakeshore Canning Co., of Conneaut, O. As there seems to be much inquiry in regard to this matter at the present time, I have asked friend Cummins to tell us how the arrangement is working to date. Below is his reply:

Friend Root:—Your favor of the 20th, inquiring about our steam-heated hot-beds, is at hand. The only change we have made since you were here was to take out the 2-inch tile used at first, and replace with 4-inch, which we find more satisfactory, and we think 4 inches is large enough. We have always used common drain-tile, cementing all joints; per-

haps sewer-pipe having socket joints would answer as well; in either case the joints should be cemented. The main steam-pipe under ground must be well protected to prevent radiation; the most important point being perfect dryness of the earth where steam-mains run. We run steam-mains through continuous wooden boxes, made from pine lumber thoroughly covered with coal tar before being nailed together, the pipe being in the center of the box, the space around to be filled with some non-conductor like mineral wool.

We arrange our beds in groups of four. At the junction of each four beds we have a pit with a loose cover; in this pit is the steam-main. Eight $\frac{3}{4}$ -inch valves and pipes connect the steam-main with the eight rows of tile through the four beds. The eight valve-stems could be continued up through the pit-cover; but our way is to remove the cover, and, by kneeling down, all the valves can be reached for manipulation. We find that, ordinarily, the temperature can be maintained at the point desired only by using steam turned into the tiles for a period of from two to three hours out of each twenty-four.

The steam-valve and inlet-pipe are only $\frac{3}{4}$ inch. A full head turned on, with a pressure on the main of about 25 pounds per sq. in., will send the steam through the length of the bed, and show a little at the open end of the 4-inch tile. The open end of the tile should be covered with a perforated hood to show when enough steam is turned on, and which will also keep vermin out of the tile when not in use.

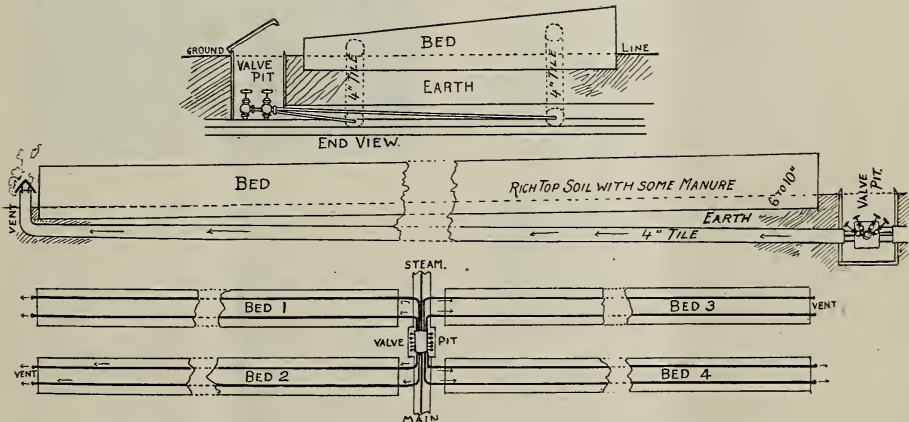
Preferably we run steam into the beds and have them thoroughly warmed by evening, then they will go through a cold night without further attention. If they should be cold in the morning, and were then thoroughly warmed up, if the sun came out hot (as sometimes occurs), the temperature is apt to rise quicker and higher than we expect; but a little experience will soon teach a beginner how to manage the steam to obtain the desired results.

the last number of the *Ohio Farmer* we find a list of 22 kinds "in which there is most interest at present." The yields per acre are as follows:

VARIETY.	Y'ld p. acre.			
	Central Station.	N. W. Sub-station.	N. E. Sub-station.	
Banner.....	201	81	68	
Carman No. 1.....	262	93	76	
Carman No. 3.....	224			
Columbus.....	281	121	112	
Clay Rose.....	214	78	74	
Craig.....	211			
Early Northern.....	270	77	66	
Early Harvest.....	290	82	63	
Everitt's Six Weeks.....	202	76	74	
Freeman.....	237	83		
Forest Rose.....	304	77		
Irish Daisy.....	247	94	169	
Koshkonong.....	309	108	115	
Maggie Murphy.....	238	76	68	
Maule's Thoroughbred.....	357			
Nebula.....	266	77	88	
Rural New-Yorker No. 2.....	213	108	104	
Somerset.....	248			
Sir William.....	308	115	154	
Salzer's Earliest.....	177			
Timpee's No. 4.....	329	85	106	
Victor Rose.....	244	101	62	
World's Fair.....	266	85	95	
Average of all varieties tested, including those not reported here.....	250	92	92	

We can not give the whole of their remarks, but only extracts.

The varieties which stood above the average in all cases are Sir William, Koshkonong, Columbus, and Irish Daisy. Following closely are Forest Rose, World's Fair, Early Harvest, Carman No. 1, Nebula, Rural New-Yorker No. 2, Timpee's No. 4, Early Northern, Victor Rose, Clay Rose, and Maggie Murphy, in the order named. All the varieties named are intermediate or late, except Early Harvest, Nebula, and Early Northern. Everitt's Six Weeks, which is the same as the Early Ohio, is slightly earlier than these, and less prolific, while Salzer's



WARMING HOT-BEDS BY RUNNING LIVE STEAM THROUGH DRAIN-TILES UNDER GROUND.

We are now running fourteen beds, each 5 ft. wide by 64 ft. long. A 10 H. P. boiler supplies the steam when drawing a full supply for each bed; and as we require this heat only from two to three hours daily, it does not require much fuel. We have used these beds for several years, and nothing would tempt us to go back to the old manner of heating with manure.

We can absolutely control the temperature of the beds at all times while the air outside the beds is lower than the desired degree in the beds.

The inclosed sketch shows arrangement of our beds, grade of tile, etc. The idea of steam-heated hot-beds was conceived and developed by my two youngest sons, who had become discouraged trying to get any thing like a uniform heat from manure-beds.

D. CUMMINS.

Conneaut, O., Jan. 21.

MAULE'S EARLY THOROUGHbred POTATO, ETC.

I have only just been informed by Prof. W. J. Green that this potato was tested also by the Ohio Experiment Station at Wooster; and in

earliest, another name for Bliss Triumph, is still less productive.

BANNER.—A good intermediate white variety. It resembles Rural New-Yorker No. 2 in both plants and tubers, but is of distinct origin. **CARMAN NOS 1 AND 3.**—These are both valuable midseason white sorts. No. 1 seems to be more subject to blight than No. 3. The latter is quite resistant, but is not exempt from the disease. No. 3 resembles the Rural New-Yorker No. 2 in tubers and foliage, but is probably more vigorous and prolific.

CRAIG.—Tested but one season. The yield was small because of susceptibility to blight. It is a vigorous grower, and no doubt prolific under favorable conditions.

EARLY NORTHER.—This may be described as an improved Early Rose, being similar to that variety in form and color, but a better cropper. It has given the best results in our various tests of any variety of its class.

EARLY HARVEST.—At present this stands at the head of the list of early white varieties. It ripens with the Early Rose. **EVERITT'S SIX WEEKS.**—Not distinguishable from Early Ohio. **IRISH DAISY.**—Too large a percent of small tubers to be desirable, but it is one of the most prolific. **MAGGIE MURPHY.**—A coarse-looking pink potato, and not of good quality unless grown on sandy soil.

MAULE'S THOROUGHbred.—It gave a high yield when grown on a small plot, and has been tested one season only. It belongs to the rose class, and seems to be very promising, but more time is needed in order to fully test its value. **NEBULA.**—Similar to Early Northern. **SOMERSET.**—A mid-season rose-colored variety of considerable promise.

SIR WILLIAM.—Some have thought that this variety has been overrated; but at the station and substation it has made a record second to none. It easily ranks with the most prolific varieties, and excels most of them in table qualities. All things considered, it deserves a place near the head of the list.

WISE.—A very vigorous and prolific pink-skinned variety from Ashland County, where it has a high reputation. It has been tested here one season only, but appears to have more than ordinary merit.

Now, friends, please notice that Maule's Thoroughbred is placed in the above table away up above every thing else. Koshkonong comes next, and Sir William third, at 308 bushels per acre. The Thoroughbred is 357 bushels besides being at least *almost* as early as the Early Ohio; and it seems a little singular that they do not make more of a stir about it in their comments. I am a little surprised to see them speak of the Craig as they do, especially when the above statement does not agree with the one from C. E. Green, who has the potato in charge, given on page 822.* Six Weeks, they say, is not distinguishable from the Early Ohio. I wonder if this has been the experience generally among potato-growers. We are also a little surprised to see them speak of Salzer's Earliest as only another name for Bliss Triumph.

◊ ANOTHER POTATO STORY. ◊

Our good friend A. E. Manum is not on y a practical and successful bee-keeper, but he likes to grow plants, and he has a special interest in raising and testing new varieties. In fact, he has been for years growing potatoes from the seed-balls. Last spring he sent me three small potatoes, and asked me to try them. On account of the boys skipping, there was a little space left right among my piece of Craigs. These three potatoes were cut to one eye, and had the same care as the Craigs. I took especial notice of them, because they were the last to yield to blight except the Craigs, and they produced enormous hills of great big fine potatoes. After the vines were dead we found we found we had something over a bushel, and wrote to friend Manum in regard to them. Below is his reply:

Friend A. I. Root:—I planted one acre and 66 rods of these potatoes, and dug from this ground 836 bushels. From one acre I got 604 bushels—601 at digging; and, since plowing the acre, 3 bushels more were thrown out by the plow, making 604 bushels from one acre, with ordinary cultivation—no forcing whatever. There was no manure used—simply 700 lbs. of fertilizer used on the acre, with 2 barrels of ashes. It was sod ground that had been to grass four years.

Mr. John Orvis, of Starksboro, to whom I gave six potatoes last spring, got 6½ bushels; and a neighbor planted one potato, and got 5 pecks. These were grown on light sandy loam. I am anxious to learn how they behaved on your rich soil. I planted on one piece, the "66-rod" one (the whole piece measuring ½ acre, but only 66 rods was planted to my seedling), two rows of Rural New-Yorker No. 2, and three rows of Mills' Prize, both varieties being noted as good yielders. Then the rest of the piece was planted to my seedlings, all treated alike throughout the season. The seedlings yielded double what either the others did. On another plat, same kind of soil, I planted the Carman Nos. 1 and 3; Bovee's Early, the Columbian, the Early Delaware, the Mammoth, and Craig, which I bought of you. From the pound of Craigs, I got ¾ bushels; average yield, 355 bushels per acre. The Carman No. 1 averaged 375 bushels per acre, and Carman No. 3, 400. The other varieties, about 300 bushels per acre. None came up to my seedling. I shall want to try some of Maule's Thoroughbred in the spring.

A. E. MANUM.

Bristol, Vt., Nov. 5, 1895.

*On the above page (issue of Nov. 1) E. C. Green says:

I can say that we had no variety of over one hundred kinds but showed signs of blight by the middle of August; and by Sept. 1st all were dead or practically so. The Craig held out as long as any kind, but had to give up long before any frost.

We also give our readers a view of friend Manum, with his animated countenance as he picks up his potatoes at digging-time.



MANUM'S "ENORMOUS" POTATO—ONE BUSHEL TO SEVEN HILLS.

In reading over the letters from enthusiastic potato-growers, and hearing about their successes, I am reminded of a little talk with friend Gault, the originator of the raspberry bearing his name. He also for many years has had a hobby of growing potatoes from seed-balls. While I was looking over his grounds one day I suggested that it took a good many years of hard labor to bring out a new potato, and sometimes a grower does not get very much reward for his work after all. He said it reminded him of a little story he once heard. A prisoner was receiving a severe reprimand from the judge. After it was ended he looked up meekly and inquired of the judge if he himself didn't ever get drunk.

"Get drunk? Why, to be sure, not."

"What! never in your life?"

"I get drunk! Why, what do you mean? To be sure, I never did. What are you thinking about?"

"Well, judge, all I have got to say is that you have missed lots of fun—that's all."

Even if my neighbor was obliged to admit that he had not received very much from his beautiful new varieties with their strange peculiar individualities, he had very much enjoyment; and one who had never experienced any such work, had, according to the verdict of the poor inebriate, missed "lots of fun." The difference between getting drunk, and raising potatoes, is, one brings only sorrow and shame;

but the development of a new variety, that may possibly be of benefit to the human family, never makes a man *worse*, even if it does not amount to much. By the way, friend Gault worked quite a while in getting a potato that would keep very late in the season without sprouting or wilting, and was rewarded by being able to exhibit at the county fair some potatoes in very good condition that were *two years old*. For prices and further particulars concerning Manum's new potato, the "Enormous," write to A. E. Manum, Bristol, Addison Co., Vt.

One thing strikes me right here that seems a little funny: Manum's potato, under *his* care, resisted the blight better than any other (Craig included) of many kinds tried. The new Craig, under *my* care, resisted the blight better than any other, *including* Manum's; and quite a few other potato-growers have reported the same experience, *theirs* being ahead. Here is where our experiment stations should come in and straighten us all up.

In regard to quality, Manum thinks his "Enormous" almost equal to the Freeman. Mrs. Root has been cooking so many new and wonderful potatoes that she has become pretty nearly tired out in the business; and she and I have never yet found any of the large-yielding potatoes, especially the late ones, that would come up to the Freeman and New Queen in *quality*. Many have been sent me, with the claim that I would find them so; but with our method of cooking they are quite a good way behind. The Craig, with us, averages about as well as any of the other large late potatoes; but when the Freeman and Queen are placed on the table, the rest are away behind, unless it is the old Snowflake. Mrs. Root complains quite a little that many of the good yielders cook all to pieces in spite of precaution.

GARDENING FOR FEBRUARY 15.

Now is the time to plant a great variety of stuff in the greenhouse or in cold-frames. It is a little early to start wax beans unless you have a greenhouse or hot-bed that can be well protected in case of zero weather. But it is just the time to start beets, Wakefield and Early Summer cabbage, early forcing carrots, Snowball cauliflower, White Plume and Self-blanching celery, water-cress, pepper-grass, lettuce, onion seed for plants, parsley, American Wonder peas, if you have room; Scarlet Globe and Early Frame radishes, spinach, and last, but not least, tomatoes. If you want to raise extra early tomatoes, a good lot of seed wants to go in right now; and if you can not do any better, sow the seed in flats or old tin pans set in the kitchen window. Under your beds in the greenhouse—that is, if there is a place under them—start asparagus, and pie-plant for forcing. Sort over your onions, and pick out all the sprouted and soft ones. Pack them in close together with rich dirt for early bunch onions. Of course, these will not make bulbs managed in this way, but they will make long green shoots that will sell in any grocery or meat-market for a nickel for a quarter or a third of a pound.

Watch for a time when the frost is out of the ground, and dig horseradish roots. We are having quite a good trade on horseradish by leaving it at the meat-markets. When people come to buy meat they will see the horseradish freshly put in neat clean bottles, and want it. We put it up in 1-lb. honey-bottles, retailing at 15 cts. If the bottle is returned, a nickel is refunded for that. With a grinder run by steam we can grind up the radish, put it into bottles, furnish the vinegar, horseradish, and all, at a cost of only about 3 or 4 cts. a bottle. In the

middle of the winter we pay from 3 to 6 cts. per lb. for roots, washed and scraped ready for the grinder.

During the last of the month you can sow your peas in the open air if the frost gets out and the weather is suitable. We have never failed in getting a crop from peas planted outdoors in February; the same way with onion-sets, but it is a little more risky. The very first onions are the Egyptian; but they are not first-class, and do not make a handsome bulb. The first to make a nice bulb is the American Pearl, from sets planted last fall. If you neglected to do this, the next best thing is to plant the sets now. Plant them outdoors as soon as you can get the ground in order; but for extra early, to be sold at good prices, put them in a greenhouse or hot-bed. If you have no hot-bed or greenhouse, put them in a cold-frame—that is, a bed made up of nice rich fine soil to be covered with glass sashes whenever it freezes. This will get them along quite a bit ahead of those outdoors.

Now, if you are going to raise plants for sale among your neighbors (and if you handle glass this is the great specialty), be sure to put in plenty of seed for tomatoes, cabbage, and celery. If you have too many plants in the seed-bed, there is not very much loss; but if you have only a few, there may be a tremendous loss. Please remember the time last spring when people were ready to give 25 cts. a dozen for tomato-plants, when none of us had any. We are going to plant, for extra early, Fordhook, Beauty, and Dwarf Champion.

THE EARLIEST POTATO.

In our last issue we were persuaded to put the White Bliss Triumph ahead of the Early Ohio in point of earliness. On our own grounds we never found any thing any earlier than the Early Ohio, not even the Ohio Junior. But almost every seedsman has something to offer that he claims to be earlier than the Early Ohio. As quite a number seemed to agree in regard to the Bliss Triumph, I placed it as I did. Knowing that one of our prominent potato-growers had grown the Bliss Triumph, I asked him to give me briefly his experience with it. Here it is:

Mr. Root:—In point of earliness, Bliss Triumph matures with Early Ohio. It is no earlier. The yield for an extra-early sort is good, also quality; but I find that the Early Ohio will grow more marketable size per acre. For an extra-early garden variety, the Ohio and Ohio Junior are hard to beat; but they do not yield with Irish Cobbler.

Fishers, N. Y., Feb. 1. ARTHUR G. ALDRIDGE.

Special Notices in the Line of Gardening, Etc.

By A. I. Root.

EUGENE DAVIS' NEW KIDNEY WAX BEAN.

At the time I wrote him, he was all sold out but about three pecks. I secured that many, and offer them for sale while they last, at the following prices: Sample packet, 5 cts.; $\frac{1}{2}$ pint, 20 cts.; pint, 35 cts.; quart, 60 cts.; $\frac{1}{2}$ peck, \$2.00; peck, \$3.75.

AMERICAN PEARL AND PRIZETAKER ONION-SETS.

We have a splendid stock of American Pearl onion-sets for spring planting, which we offer for immediate orders as follows: Quart, 20 cts.; peck, \$1.25; bushel, \$4.00. If wanted by mail, add 10c per quart extra for postage.

We can furnish the Prizetaker onion-sets at the same price as the American Pearl mentioned above. At present we are not prepared to say which will be better—putting out Prizetaker onion-sets or transplanting Prizetaker plants. The sets have this advantage: They can be planted out in the open ground as soon as the frost is out and the land is

ready to plant. The onion-plants, however, especially if they are grown in a greenhouse or hot-bed, can not be safely put in the open air until a month or more later.

SECOND-SIZE POTATOES.

At the very low prices we have put on these, we are all sold out except a few Early Obios, a few of the new Craig, and a few of Lee's Favorite.

PRICES ON MANUM'S "ENORMOUS" POTATO.

We can furnish these potatoes- at Manum's prices; viz., 1 lb., by mail, 40 cts.; 3 lbs., \$1.00; by freight or express, $\frac{1}{2}$ peck, 40 cts.; peck, 75 cts.; $\frac{1}{2}$ bushel, \$1.25; bushel, \$2.00; barrel, \$4.50. The potatoes will be shipped from Medina or from Bristol, Vt, as may be most convenient.

SEED POTATOES FOR SOUTHERN SHIPMENT.

With the practical experience we have had in the matter (and some burned fingers in the bargain) we will undertake from this date onward to ship all potatoes going south of the State of Ohio, at our own risk from frost. With the very efficient aid the Weather Bureau now furnishes, and with good stout paper put all around the potatoes, we think we can get them over the frost-line before the frost catches them—at least, we are going to undertake it, therefore send in your orders, whether it be for one pound or for ten barrels.

SECOND-SIZE CRAIG POTATOES.

The boys just now report that it is a very hard matter to find any more second-size Craigs, from the fact that they all run large or very large. Now I will tell you what we will do: During this season of potatoes in such great plenty it seems to be the fashion to pick out the best and nicest shaped ones for seed; therefore in the future all orders for second-size Craigs will be filled with bad-shaped ones—those bruised perhaps a little in digging, or any of them that are not so smooth and handsome as some of the others. For planting, these seconds will be practically just as good as any other, but by running them off at half price we will have left only the smooth, handsome, good-sized ones for those who order and pay for a strictly No. 1. This will bring them down to about the ordinary price of good seed potatoes; namely, \$1.25 per bushel, or \$3.00 a barrel.

THE IRISH DAISY POTATO.

Mr. Wilbur Fenn, of Tallmadge, O., is well known to many of our readers as the man who succeeds so well with potatoes planted *late*, and gives us such beautiful-keeping Monroe Seedlings because they were grown and dug the very last thing before frost. Well, Mr. Fenn informs me that he has about 500 bushels of the Irish Daisy, so well known before the potato world that I hardly need describe it. These potatoes are offered at the following very low prices, until further notice: 1 lb., by mail, 12 cts.; one peck, by freight or express, 20 cts.; $\frac{1}{2}$ bushel, 35 cts.; bushel, 60 cts.; barrel, \$1.50. You can send your orders direct to us or to Mr. Fenn, as given above, as you choose. If you want to see what a magnificent bargain we are giving you on these Irish Daisies, just look at the prices on them in the catalogs.

Let me call attention once more to Mr. Fenn's *Monroe Seedling* potatoes. These (for this season) were planted the day after the Fourth of July. The consequence is, they are really "second crop," like the White Bliss Triumph, except that the seed was raised in exactly the same way the year before. They will keep hard and firm long after other potatoes have sprouted or become soft, and they also have a much stronger tendency to send up only one strong shoot instead of sprouting all over, as the early-grown potatoes do. His late-grown Monroe Seedlings have quite a reputation. At the very low prices we have already put on them it ought to give them a good sale. Peck, 20 cts.; $\frac{1}{2}$ bushel, 30 cts.; bushel, 50 cts.; barrel, only \$1.25.

THE WHITE BLISS TRIUMPH POTATOES.

In our last issue, in speaking of these, second crop *extra early* potatoes, I omitted to say that we had made an arrangement so we could ship them from here or from Goldsboro, N. C., at the prices mentioned. In fact, we have just received a barrel, packed in cotton seed. They came in excellent order, right in the middle of winter. Friend Swin-

son makes the following claim, aside from the fact that these potatoes are second crop and extra early; viz.:

These are grown from SELECTED SEED FOR TWO YEARS, and produced by vines upon which no POTATO-BUGS were allowed to live, develop, and go down to deposit their eggs in the potatoes, ready to come up in the spring, with the young potatoes, to devour them before they get large enough to treat. This of itself is of paramount value to planters whose land is not already infested with these pests.

In regard to immediate shipment, friend Swinson writes:

I can ship anywhere south, from now on, with safety; but north of here, till April 1st, add \$1.00 for each barrel, to be shipped at my risk, and I will pack as I did yours, and ship anywhere.

SWEET CORN FOR SOWING FOR FODDER, ETC.

Until the stock is exhausted, we will furnish Stowell's Evergreen and Mammoth sweet corn, grown in 1894, at the low price of only \$1.00 per bushel. The greater part of it will germinate; and for sowing broadcast for feed, perhaps it will do almost as well as any corn.

PIE-PLANT IN WINTER TIME.

When Mrs. Harrison's letter in another column came to hand, it made me think that I saw some pie-plant across the way, right over the drain-tiles that carry the exhaust steam, looking as if it had a great notion to start up and grow. A frame made on purpose to hold six ordinary hot-bed sash was set over the plants, and the glass put on; and in just about a week I had one of my "pleasant surprises" by seeing the great leaves doubling themselves up in the vain endeavor to push the glass sashes out of their way, and we are now furnishing material for "early pies," grown already in the year 1896.

PARSNIP SEED AT A VERY LOW PRICE.

In the fall of 1894 we harvested several bushels of the nicest parsnip seed I ever saw. In fact, the stalks were away up above one's head on our rich market-gardening ground, and the seeds were remarkably large and plump. Now, we have found by practical test that parsnip seed of our own raising grows just about as well when it is two years old as when it is only one year old. But I should not want to sell anybody two-year-old seed without telling him of it, and making the price accordingly. Therefore we will furnish this 1894 seed, while it lasts, at the low price of only 10 cts. per lb. If wanted by mail, add 9 cts. extra for postage and packing. If you are in the habit of drilling your parsnips in pretty thickly, with the idea of thinning them out, this two-year-old seed will probably answer just as well as any.

HUBBARD SQUASH SEED, ETC.

We have just purchased several bushels of extra nice Hubbard squash seed from one of our bee-keeping friends. The squashes were raised from seed furnished by us last season, and the grower pronounces them a very nice strain of Hubbard squashes. In consequence of the short cut from the grower to the dealer, without any middleman, we are enabled to furnish them at the very low price of 35 cts. per lb., or five pounds or more at 30 cts. per lb. Hubbard squashes are now worth about \$20.00 per ton in the market, and for ever so many years past the demand in the month of February has been away beyond the supply. Successful growers claim they can be raised at a profit for \$5.00 per ton; but if you get \$15, \$20, or \$25 they are an excellent thing to raise. By following the directions given in our little book, "Gregory on Squashes," you can keep them until February, almost without loss. In spite of you some of them spoil on your hands you can easily dispose of the seeds—that is if you are a reliable man, and we take it for granted you are. By the way, if you have never read the little book, Gregory on Squashes, you ought to have it. T. B. Terry says it is one of the first books that started up his enthusiasm on the subject of agriculture. I have read it a good many times; but even now it does me good, and gives me enthusiasm to read it again. We can send it to you by mail for 25 cts.

ALSIKE CLOVER—WHEN AND HOW TO SOW THE SEED.

From now on until the middle of March is the time to sow the seed. Watch your chances; and when you see the ground freezing in the morning, so that it is opened up full of holes or cells like the

cells in a honey-comb, get at it quick, and have your seed dropped into these openings. If the sun comes out an hour or two later, and causes the ground to thaw out and settle over your seed, you have got it exactly, and your stand will be almost a ure thing.



CHEAP SECTIONS.

Of the sections offered for sale from our Chicago branch in last issue, the cream, or second quality, are all sold; but we can still supply the better quality. We have also a large stock of triangular top-bar frames, in the stock taken of Newman, which we offer at \$1.00 per 100; 300 for \$2.70; 500 for \$4.00; 1000 for \$7.00, as long as they last.

HONEY, COMB AND EXTRACTED.

We are still prepared to furnish those in need of choice honey at the following prices: Choice alfalfa comb honey at 15 cts. per pound. Lots of 9 cases or over at 14c. Choice alfalfa or California extracted, in 60-lb. cans, 2 in a case, at 7½c; 2 cases or over, at 7c. Willow-herb, and clover and basswood mixed, at ½c per lb. extra in 60-lb. cans. Alfalfa in 1-gallon cans, 6 in a case, \$6.00 per case; 3 cases, \$16.50; 5 cases, \$25.00.

MAPLE SUGAR AND SYRUP.

□The season for maple sugar and syrup is at hand, and we expect to supply it as usual. We have secured a few gallons of new syrup already. We still have some choice of 1895 make, at \$1.10 per gallon; 10-gallon lots at \$1.00. Until the new is more plentiful, price will be 15c per gallon more than the old. We have no sugar as yet to offer, but will book orders for delivery as soon as it comes in. Price for choice, 10c per lb. No. 2, 9c; No. 3, 8c; 50 lb. lots, ½c less; barrel lots, 1c per lb. less.

OUR CATALOG FOR 1896.

We have had so much printing to do for other parties that we are behind on our own, and have not been able yet to send a copy of our catalog to our subscribers. We expect to do so during the next two weeks; and a few weeks later you will also receive a catalog of Tools and Household Specialties, which is now nearing completion. It will contain over 300 illustrations, and we trust it will be of great assistance to you in buying your home supplies.

REDUCED PRICES ON SECTIONS, ETC.

Because of the close times, and the desire on the part of buyers everywhere to save a few cents whenever it is possible, there is a tendency on the part of some of our customers to invest in an inferior grade of goods because they are offered at lower prices than we ask for our superior extra-polished sections. Having a large stock of sections and an almost unlimited supply of lumber to make more, we have decided to offer the following special prices:

	1000	2000	3000	5000	10,000
No. 1 white extra-polished	\$2 75	5 00	7 20	12 00	22 50
Cream, or No. 2 "	2 25	4 20	6 00	10 00	18 50

No change in prices for less than 1000.

Any of the Dovetailed hives listed in our catalog. In lots of 10, deduct 10c per hive.

In " 25, " 15c "

In " 50, " 20c "

In " 100, " 25c "

No change in price for less than 10 hives.

If in need of these goods we confidently look for your orders, believing that a comparison of our goods with any others will show the superiority of the Root goods.

SECOND-HAND FOUNDATION-MILLS.

We have quite a list of second-hand foundation-mills to offer, and most of them are a bargain at the price. If you are interested, and will write, telling us what grade of foundation you want to make, we shall be pleased to submit samples. We have at this date the following:

Six-inch hex., No 1467. Just right for thin foundation. Almost as good as new. Price \$12.00.

Six-inch hex., No. 1321. All right for thin surplus foundation, and in good order, but comes from the rolls a little hard. Price \$6.00.

Six-inch hex., P. P. Vandervort. Price \$9.00. A good mill for the money.

Six-inch hex., Q. Q. Vandervort. Price \$5.00. This has several cells bruised which leaves a streak in the foundation; otherwise it does good work.

Ten-inch round cell, old style, M. M. Price \$9.00. This mill was made some time ago, and is not of course equal to mills we are making now, but it will answer nicely for heavy foundation.

Ten-inch round cell, old style, N. N. Price \$10.00. Similar to the preceding but in better condition.

Ten-inch Pelham mill. Price \$8.00. This is also suitable for heavy foundation. Deep wall- with thin base.

Kind Words From Our Customers.

The R. & E. C. Porter bee-escape clears the super of bees so quickly and perfectly and easily that it makes the taking-off of honey a pleasure instead of a dread, as in former years. G. M. DOOLITTLE.

Borodino, N. Y., Jan. 18.

STRAWBERRY-PLANTS ALL THE WAY TO TEXAS.

The small order of strawberry-plants you sent us a short time ago are doing well, and I want your other varieties to test here. Your plants grow better than those I got from other growers.

La Porte, Texas.

H. W. THOMPSON.

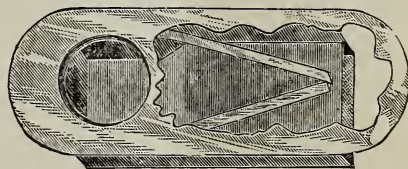
A KIND-WORD FROM ONE OF OUR JUVENILES.

Dear Uncle Amos:—I want to thank you for keeping such nice books for sale. My papa got me one last spring called "Bible Pictures." He gave it to me on my birthday. I was eight years old on Easter Sunday. I like my book very much, and I can tell something about almost every picture, and never get tired of it. I want to thank you too for GLEANINGS, for my papa has become a much better man since he has been reading it, and has quit using tobacco.

We have 59 stands of bees. They are wintering well. My sister and I watch them in swarming-time, and papa gives a nickel for every swarm we see come out. We give the money to the Sunday-school. I do not like bees, because it makes me sick when they sting me; but I do like honey. I wish you could visit us and go with us to Sunday-school.

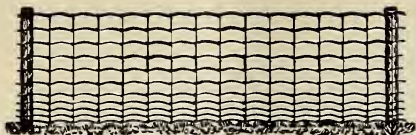
CHRISTINE SMITH.

Advantages of Bee-Escapes.



No sweat steals down the heated cheeks and aching back of the bee-keeper as the result of standing in the hot sun puffing, blowing, smoking, and brushing bees; no time is wasted in these disagreeable operations; and no stings received in resentment of such treatment; the honey is secured free from black or even the taint of smoke; the cappings are not injured by the gnawings of bees; and robbers stand no show whatever. If there are any broken burr-combs they are cleaned up by the bees inside the hive, before the honey is removed. Leading Bee-keepers use the Porter Escape, and say that without a trial it is impossible to realize the amount of vexatious, annoying, disagreeable work that it saves. The cost is only 20 cts. each, or \$2.25 per doz. As in the past, this escape is manufactured by the Porters, but THE A. I. ROOT CO. are now the exclusive selling agents for this country. Order of your dealer or of

THE A. I. ROOT CO., Medina, Ohio.

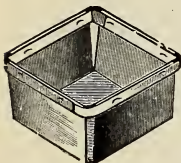


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He must have it handy. For the same reason the coil of the serpent is not stowed away in the end of its tail. Like-wise(ly) the Page Fence is coiled its whole length, and is always ready for business.

PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

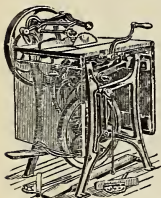
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Orders booked now for spring delivery for
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Parties living east of the Mississippi River will be supplied direct from our nurseries in Ohio. Satisfaction guaranteed.

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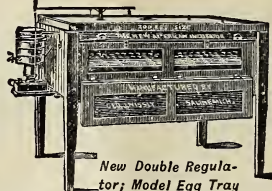
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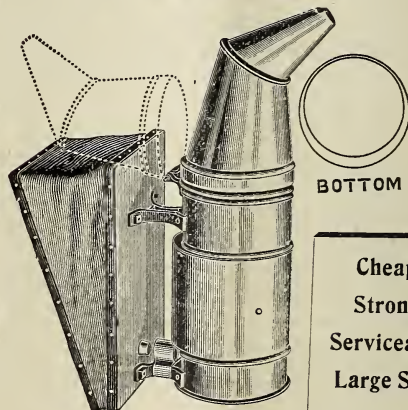


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The Corneil smoker is a Dandy with a big D. I have been using it to-day on the crosscut colony of bees I ever saw. I think I could drive a bulldog with it. S. R. AUSTIN.
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